UNIVERSITY OF CALIFORNIA

Santa Barbara

Conversations with Native Speakers: Acquiring Japanese as a Second Language

A dissertation submitted in partial satisfaction of the

requirements for the degree Doctor of Philosophy

in Linguistics

by

Allison Silver Adelman

Committee in charge:

Professor Patricia M. Clancy, Chair

Professor Stefan Th. Gries

Professor Sandra A. Thompson

Professor Dorothy Chun

September 2014

The dissertation of Allison Silver Adelman is approved.

_____

Stefan Th. Gries

_____

Sandra A. Thompson

_____

Dorothy Chun

_____

Patricia M. Clancy, Committee Chair

June 2014

Conversations with Native Speakers: Acquiring Japanese as a Second Language

ACKNOWLEDGEMENTS

To acknowledge all of those professors, friends, and family members without whom I couldn't have written this dissertation is nearly as overwhelming a task as writing the dissertation itself. First and foremost, I am grateful for the seven years of guidance, enjoyable conversations (including reminiscences about time spent in Japan), and support that I received from my MA thesis and dissertation advisor, Professor Pat Clancy. Pat's confidence in me and her interest in my research never failed to encourage me, when otherwise I might not have believed in my own abilities quite as much. I also owe a great debt to my other committee members. I could never have written this particular dissertation without the help of Professor Stefan Gries. Stefan generously and patiently walked me through explanations of the necessary statistics; I always appreciated talking with him (and with Pat) about our shared interest of language acquisition. Professor Sandy Thompson has been a great source of inspiration and kindness: her genuine concern for my well-being helped me keep my priorities in line. I truly value her support and her friendship. I was lucky to get to know Professor Dorothy Chun through the two classes I took in her department. I have been thankful for her input and her perspective on this slightly unconventional encroachment into her field of Second Language Acquisition.

I am also indebted to Nobutaka Takara and Mikuni Okamoto. Nobu very kindly double-checked nearly all of my transcriptions, despite being quite busy with his own dissertation, and was extremely helpful in talking through other aspects of my project as well. I was lucky to have Mikuni as a research assistant; she cheerfully helped out by double-checking my transcriptions and identifying L2 learner errors in my corpus.

I could never have collected all of my data were it not for the help of many friends who recruited their own friends and acquaintances to participate in my recordings of L1-L2 conversations. For their assistance in gathering data, I would like to thank Daisuke Yokomori, Seunghee Jang, Naoki Otani, Ryoko Suzuki, Mimi Ghosh, and all of the people who participated in the corpus recordings themselves.

To all of my fellow graduate student friends who have both distracted me from my studies (when I needed it) and encouraged me (when I needed it), especially Vero Muñoz Ledo, Brendan Barnwell, Heather Simpson, Janie Lee, Lynnette Arnold, and Lauren Gallow, I cannot thank you enough. I will also always be grateful for the friendship of Professor Carol Genetti, and the opportunity I had to work as her assistant editor.

I want to thank my parents and my family for cheering me on from afar (and for their love, phone calls, emails, and visits). I especially thank my mom, first for never pushing me academically (for many years) and then for pushing me to finish my dissertation quickly over the last few years – exactly what I needed in both cases.

Finally, words cannot express my gratitude to my fiancée, Paula, for putting up with me throughout my last 3.5 years of graduate school, with all of the stresses that came along with it. She has only known me as a grad student, but she has nevertheless given me the benefit of the doubt about many things, and has been absolutely the most caring, patient, understanding, and supportive (future) wife I could ever have hoped for. She inspires me every day with her belief in me and with her own ambitions. Paula, thank you for agreeing to delay our wedding until after I'd finished my PhD; the wait is over!

VITA OF ALLISON SILVER ADELMAN
September 2014

Education

Expected 2014 Ph.D. Candidate, Linguistics, University of California, Santa Barbara
Chair: Patricia M. Clancy
Committee: Stefan Th. Gries, Sandra A. Thompson, Dorothy Chun
PhD emphasis in Applied Linguistics.

2010 M.A. Linguistics, University of California, Santa Barbara
Chair: Patricia M. Clancy
Committee: Stefan Th. Gries, Sandra A. Thompson

2003 B.A. *(Double Major)*, Bryn Mawr College
Major in Linguistics at Swarthmore College
Major in Spanish at Bryn Mawr College

Fellowships and Grants

Spring 2014 Javits Dissertation Fellowship, Graduate Division, UC Santa Barbara

2010 Conference Travel Mini Grant, Department of Linguistics, UC Santa Barbara

2008-2012 Jacob K. Javits Fellowship, U.S. Department of Education

2008 FLAS Summer Intensive Language Study Fellowship
Korean Language Program, Ewha Womans University, Seoul, South Korea

2008 FLAS East Asian Graduate Academic Year Fellowship
Department of East Asian Languages and Cultural Studies, UC Santa Barbara

2007 Small Department Regents Fellowship
Department of Linguistics, UC Santa Barbara

Conference Presentations

May 6, 2010 From Grammar to Interaction: The Japanese Pragmatic Particle *de*.
Conference on Language, Interaction, and Culture (CLIC), UC Los Angeles

Apr. 30, 2010 From Grammar to Interaction: The Japanese Pragmatic Particle *de*.
Workshop on Pragmatic Markers in Asian Languages, Conference on Language Discourse and Cognition (CLDC), National Taiwan University

Feb. 20, 2010 Prosody and Argument Structure in the Acquisition of Japanese.
Workshop on East Asian Linguistics (WEAL), UC Santa Barbara

Publications

2014 Gries, Stefan T., and **Adelman, Allison S**. Subject Realization in Japanese Conversation by Native and Non-native Speakers: Exemplifying a New Paradigm for Learner Corpus Research. In Romero-Trillo, J. (ed.), *Yearbook of Corpus Linguistics and Pragmatics 2014: New Empirical and Theoretical Paradigms*, Yearbook of Corpus Linguistics and Pragmatics, Vol. 2. Springer International Publishing. (Forthcoming.)

2009 Book Review of Miyako Inoue. (2006) Vicarious language: Gender and linguistic modernity in Japan. *Gender and Language*. 3(2): 275-278.

2009 Book Review of Alison Wray. (2008) Formulaic language: Pushing the boundaries. *Journal of Sociolinguistics*. 13(4): 555-558.

Employment

2012-2014 Teaching Assistant, Japanese Language
Department of East Asian Languages & Cultural Studies, UC Santa Barbara

2012-2014 Research Assistant
Professor Sandra Thompson, Department of Linguistics, UC Santa Barbara

2009-2014 Assistant Editor
Genetti, Carol (ed.), *How Languages Work*. Cambridge University Press

2006-2007 Linguistic Annotator
University of Pennsylvania Linguistic Data Consortium, Philadelphia, PA

2004-2006 Area Teacher Trainer for Central Japan
AEON Amity Corporation Head Office, Okayama, Japan

2003-2004 Children's Native English Teacher
Tokuyama Branch School, AEON Amity Corporation, Shunan-shi, Japan

Professional Activities

2013-2014 Workshop Co-organizer, Cognition and Language Workshop (CLaW)
Graduate Student Group, UCSB Department of Linguistics

2011-2012 Workshop Head Organizer, Workshop on East Asian Linguistics (WEAL)
Graduate Student Group, UCSB Department of Linguistics

2011-2012 Workshop Co-organizer, Cognition and Language Workshop (CLaW)
Graduate Student Group, UCSB Department of Linguistics

2009-2010 Workshop Co-organizer, Workshop on East Asian Linguistics (WEAL)
Graduate Student Group, UCSB Department of Linguistics

2008-2009 Graduate Student Faculty Representative
Department of Linguistics, University of California, Santa Barbara

ABSTRACT

Conversations with Native Speakers: Acquiring Japanese as a Second Language

by

Allison Silver Adelman

Children acquire their L1 entirely through interactions with other speakers; in the same way, L2 learners benefit from participating in conversations with native speakers. I take a discourse-functional view of native speaker competence, assuming that positive evidence (language in use), comprising both frequency and contexts of usage, plays an important role in native speakers' mental representations and acquisition of grammar. If we assume that any comfortably proficient L2 speaker cannot have acquired that language ability solely from textbooks or classroom instruction, then the question arises: in what ways does conversation help language learners acquire a discourse-based grammar mirroring that of native speakers? I address this question across three case studies, using data from twelve conversations, each between one native speaker and one non-native speaker of Japanese.

The first case study (Chapter 3) investigates the types of explicit and implicit interactional feedback (comprising negative as well as positive evidence) that native speakers provide in conversation with non-native speakers. I conduct a qualitative analysis of points in the conversation related to the non-native speaker's language ability, including

instances of explicit metalinguistic discussion and of implicit feedback, such as recasts of non-native speaker utterances, and I suggest the ways in which these function as potential L2 learning mechanisms.

In the other two case studies, I examine the question: To what extent do the conversational grammars of non-native speakers exhibit the same relationships between grammatical form and discourse function as the conversational grammars of native speakers? In Chapter 4, I conduct a qualitative and quantitative analysis of Noun-Modifying Constructions (NMCs) and compare the usage of NMCs among native vs. non-native speakers, based on discourse factors, finding that the non-native speakers, especially those with more experience living in Japan, produced NMCs with frequencies and distributions similar to those of the native speakers.

In Chapter 5, a quantitative analysis of subject argument realization, I use a mixed-effects model to show that both native and non-native speakers' patterns of subject realization are influenced by discourse-pragmatic factors such as givenness and contrast, and that the patterns observed among non-native speakers mirror those in native speakers' speech. I propose that non-native speakers can only demonstrate such similar sensitivities to discourse-pragmatic factors if exposed to native-speaker-like frequencies of use in conversation. The findings of this case study allow for a glimpse into the impact of positive evidence from natural input on L2 learners' acquisition of discourse-based grammar.

TABLE OF CONTENTS

Chapter 1. Introduction

1. Introduction

Many people—not only second language learners—have been awed by the complexity of language, and by children's ability to acquire their first language with seemingly little effort. As adults, the hard work of acquiring a second language can seem to be an entirely different process from that engaged in by children; however, there are several fundamental parallels. Children acquire their L1 entirely through conversational interactions with other speakers; in the same way, L2 learners undoubtedly benefit from participating in conversations with native speakers, in which they are exposed to all of the idiosyncrasies, frequencies, and discourse patterns of spoken language. Moreover, such interactions are replete with the contextual information that gives rise to certain pragmatic nuances or uses of grammatical constructions, which learners are unlikely to find in a classroom or textbook. If we assume that any comfortably proficient L2 speaker cannot have acquired that language ability solely from textbooks or a classroom, but also from some interactions with native speakers, then the question arises: in what ways does naturally occurring conversation with native speakers function as a learning mechanism for non-native speakers?

A clear majority of the research in the field of Second Language Acquisition (SLA) to date has centered around the acquisition of English (or other European languages), while relatively little work outside of Japan has focused on the L2 acquisition of Japanese. Apart from the clear need to address this area, L2 researchers have also noted that Japanese has many linguistic features not found in European languages (e.g., Kanno 1999); such

research would thus create unique opportunities to investigate a larger range of grammatical, pragmatic, and interactional phenomena.

Moreover, much of the research into SLA has focused on pedagogical rather than theoretical implications, and has employed experimental methodologies, either in a pre-test/post-test format or through tests for comprehension among groups of L2 students who received different types of instruction. Such research has made countless valuable contributions to our understanding of L2 acquisition and pedagogical approaches, but it fails to capture—or even to begin investigating—how a great deal of L2 acquisition takes place for many language learners. Too few studies have examined natural conversational L2-learner data, in particular conversations between native and non-native speakers, in order to investigate the role that such conversational interactions play in L2 learners' acquisition of a native-speaker-like discourse-based grammar.

The goals of this dissertation are: to address this gap in the SLA literature; to model an approach to L2 acquisition research that combines both qualitative and quantitative corpus methods in examining conversational Japanese data between native and non-native speakers; and to deepen our understanding of the role of conversation as a potential L2 learning mechanism.

1.1. Theoretical Framework and Research Questions

In this section, I will discuss the theoretical framework, motivation, background, and assumptions for the research questions that will be pursued in this dissertation.

In this investigation of the L2 acquisition of conversational Japanese, I will take a discourse-functional view of native speaker competence. This view assumes that frequencies and contexts of use are part of what constitutes grammar. It also assumes that discourse patterns are systematic (e.g., Stefanowitsch and Gries 2008), that grammar arises from usage (Hopper 1987; Bybee and Hopper 2001; Bybee 2006, 2007, 2010), and that these patterns emerge to fulfill speakers' communicative and interactional goals (Givón 1979, Hopper & Thompson 1980, Du Bois 1987, Thompson & Hopper 2001).

In a usage-based theory of grammar, language is made up of form-meaning pairings, or symbolic units (e.g., Bates & MacWhinney 1987, N. Ellis 2002) that range in granularity and abstraction, stored with no representational distinction between grammar and lexicon (e.g., Jurafsky 1996; Bybee and McClelland 2005; Bybee 2006). From the perspective of Cognitive Grammar, a syntactic pattern can only obtain the status of a symbolic unit if it both carries semantic/conceptual content and occurs frequently enough to become entrenched in a speaker's linguistic system (Langacker 1987; Gries 2008). Each such form-meaning pairing, or symbolic unit, can be viewed as a type of "construction" (Goldberg 1995, 2006).

In an exemplar representation of grammar, specific instances of use affect the way form-meaning pairings are stored; therefore frequency itself must be part of the cognitive representation of such units (Bybee 2006, 2010). Language is acquired as these

representations are built up through repeated experience with each construction (Bybee & McClelland 2005; Abbot-Smith & Tomasello 2006; N. Ellis & Ferreira-Junior 2009). Highly frequent form-meaning pairings are more likely to become entrenched in speakers' minds as part of their grammatical systems (Bybee 1985). This view of speakers' mental representation of grammar stands in contrast to Chomsky's assertion that language acquisition is based primarily on innate linguistic knowledge rather than on experience with language use.

Although usage-based theories of acquisition mainly center around child language research (e.g., Tomasello 2000; Savage et al. 2006), several studies have demonstrated the usefulness of similar approaches to investigating the ways in which exemplars and their type/token frequencies determine L2 acquisition of structure (e.g., N. Ellis 2002; Gries and Wulff 2005; N. Ellis & Ferreira-Junior 2009). Every usage event of a linguistic unit has an effect on its stored mental representation (e.g., Bybee & Hopper 2001; N. Ellis 2002), regardless of whether the language is the speaker's L1 or L2.

In this usage-based view, we can only determine the functions of a particular grammatical construction based on data from language in use, as opposed to constructed data (see e.g., Williams and Kuribara 2008). The field of discourse-functional, usage-based linguistics has widely embraced the use of naturally-occurring spoken language corpora as the data on which to base analyses of linguistic forms and functions. Increasingly, first language acquisition researchers have found that the acquisition of grammar cannot be separated from its communicative context (see e.g., Ochs 1979; Clancy 2000; Tomasello 2002, 2006; Theakston & Lieven 2008), and that grammatical construction types and frequencies in child language mirror those of the child's primary interlocutors. Such

findings point toward the necessity to examine child language along with the interlocutor's language, rather than in isolation (Clancy 1985; Tomasello 2006; Adelman 2010).

In the same way that child language acquisition cannot be fully understood when removed from its conversational context (i.e., when examined in isolation from caregiver language), there is much to be gained by examining non-native speaker utterances in the communicative context of conversations with native speakers. Such data further allow for an examination of the role of interactional phenomena that are primarily limited to conversation (such as questions/answers, backchannels, repetitions, co-constructions, etc.) in L2 acquisition. In order to examine Japanese learner language in such a context, I collected conversational data of one-on-one interactions between native and non-native Japanese speakers.

Conversation is distinct among many other genres of discourse in the way it limits and shapes the responses of its participants—in the same way that caregivers might—consciously or not—shape the responses of their L1-acquiring children (via scaffolding, etc.; Bruner 1975, Scollon 1976). But there is also a subconscious formational factor that shapes our mental grammars, whether we are acquiring a first language or a second; this is the effect of the stochastic frequencies of linguistic forms in specific contexts that speakers have been shown to be sensitive to (N. Ellis 2002; Bybee 2006, 2007, 2010; Abbot-Smith and Tomasello 2006). Just as children acquire native-like frequencies of their first language, second language learners can approximate native-like frequencies through experience in and exposure to conversational discourse. Second-language learners—not just native speakers—have been shown to be sensitive to frequencies of linguistic expressions and their (syntactic/social/etc.) contexts of usage (N. Ellis 2002; N. Ellis &

Ferreira-Junior 2009). The knowledge of such frequencies can itself be viewed as "grammar."

The overarching question that motivates this dissertation is: **How does conversational interaction with native speakers help language learners acquire a discourse-based grammar mirroring that of native speakers?** I will address this broad, underlying question through the two specific research questions that follow.

Ordinary conversation is fundamental to human interaction and has been called the "primordial site of [human] sociality" (Schegloff 1996, 1987); everyday conversation is the "most predominant" form of interactional speech in Japanese (Takagi 2002). It follows that if second language learners of Japanese want to interact and communicate in native speaker-like ways, then they must engage in everyday conversation with native Japanese speakers, in which the frequencies and contexts of the usage of grammatical constructions will doubtless differ from those experienced in the classroom setting.

Corpus methods have been employed more frequently for studies of first language acquisition than for second. SLA researchers have tended to prefer experimental methods (e.g., Williams and Kuribara 2008), in particular those with a pre-test/post-test format for analyzing students' progress toward L2 acquisition with respect to a particular grammatical form or construction. For example, Sasaki's (1998) study, which focused on the acquisition of Japanese double-object actives and causatives, conducted an experiment on the contrast between Japanese canonical and non-canonical word orders in double-object active and causative sentence types. In my conversational discourse data, however, such grammatical structures together make up less than 0.2% of all verbal-predicate clauses uttered. This type of narrow emphasis on specific grammatical phenomena regardless of their frequency

in naturally-occurring discourse limits our larger understanding of Japanese second language acquisition. Few studies have examined L2 production in the context of conversation, especially in conversation with native speakers.

The experiences of second language learners often differ widely from the classroom to the outside world. Japanese spoken conversation contains many additional complexities beyond those of the written language or the language taught in textbooks. For example, in spoken conversation, speakers typically: do not use any subject arguments in their clauses, produce highly abstract and context-dependent noun-modifying constructions, and use multiple combinations of interactional final particles. Such phenomena, among others, make up an important part of native Japanese speakers' grammatical system, yet language learners are generally only exposed to such instances of usage by taking part in naturally-occurring conversations. Moreover, in contrast to language practice in the classroom context, participating in conversation forces L2 speakers to engage with their native speaker interlocutors in real time—participating in question-answer adjacency pairs; socially accommodating or being accommodated to; and experiencing cognitive effects of lexical and structural priming (Bock 1986; Bock & Loebell 1990; Gries 2005). Thus taking part in conversation influences L2 learners toward producing essentially the same types and frequencies of linguistic constructions as their native speaker interlocutors do.

In the case of Japanese, in particular, many language textbooks, or L2-learning approaches, focus primarily on polite or formal registers of the language. While immensely useful and important from a social perspective, communication that takes place in polite/formal (or in hyper-polite) social situations likely constitutes only a small fraction of

the total amount of linguistic interaction in which Japanese native speakers—and many non-native speakers—participate. Therefore, there is a need for linguistics research to acknowledge that informal Japanese conversational interactions (i.e., those among close acquaintances, friends, or spouses) may be the central locus of Japanese learners' exposure to and acquisition of native-speaker-like discourse patterns of expression, presumably every learner's ultimate objective.

The examination of this type of data is largely missing even from the limited number of corpus studies related to Japanese second language acquisition. Japanese L2 speaker corpora have either been based on written Japanese (e.g., the Learner's Language Corpus of Japanese) or have involved primarily formal Japanese (the polite register typically used among people who have only recently met) in artificial settings—such as asymmetrical interview formats (e.g., the Hypermedia Corpus of Spoken Japanese)—rather than attempting to capture casual everyday conversation among speakers who are already well-acquainted with each other (e.g., close friends or spouses), in more natural settings. The type of corpus data that has thus far been used to investigate the process of acquiring Japanese as a second language needs to be supplemented by more informal conversational discourse data, as will be addressed in Chapter 2, in discussing the data used for this dissertation.

If we assume that participation in informal Japanese conversational interactions is indeed an important factor in L2 learners' ability to more closely approximate the spoken Japanese of native speakers, it follows that we should be able to identify potential learning mechanisms within Japanese conversational discourse that may facilitate L2 acquisition.

Long (1983) has demonstrated that native speakers modify their speech in a variety

of ways in order to avoid communication breakdowns in conversations with non-native speakers. These modifications include including checking for comprehension, requesting clarification, tolerating ambiguity, and repeating utterances, all of which are behaviors considered to be part of "negotiation for meaning" in the field of SLA (Long 1996). In addition to facilitating face-to-face communication, interactional feedback from native speakers may play a role in L2 learning, as some SLA researchers have shown (Mackey and Gass 2006, Inagaki & Long 1999, Mackey & Philp 1998).

L2 feedback may consist of direct, explicit error corrections or metalinguistic information (Mackey 2007, R. Ellis 2007) or may consist of indirect, implicit clarification checks, repetitions, or recasts (e.g., Long et al. 1998, Lyster 1998, Braidi 2002, Nabei 2002). Recasts are one of the most frequent types of feedback (R. Ellis et al. 2001, Lyster and Ranta 1997); they have been defined as "an implicit reformulation of the [learner's] nontarget utterance" (Lyster 2004: 331). SLA research on feedback and L2 development has shown that both implicit and explicit feedback are positively associated with learning (e.g., Russell and Spada 2006), though some studies have focused on the importance of implicit feedback (Doughty and Varela 1998, Mackey and Philp 1998, Han 2002, Leeman 2003), while others have concluded that explicit feedback is more effective (Carroll and Swain 1993, Carroll 2001, Rosa and Leow 2004, R. Ellis et al. 2006). Research on native speaker feedback has typically been conducted using either experimental data (Mackey et al. 2000, Mackey and Philp 1998, Carroll and Swain 1993) or classroom data (Ohta 2000, Lyster 1998, Doughty 1994), with fewer studied investigating the types of feedback that occur in conversational discourse among native and non-native speakers.

Research in the field of SLA has additionally focused on the roles of positive

evidence (the target language in use) and negative evidence (feedback regarding what utterances are ungrammatical) in L2 development, assuming that both types of evidence serve as learning mechanisms. Conversational feedback can be a source of both positive and negative evidence (Schachter 1991), for example, recasts indicate that what the learner has said is incorrect (negative evidence) while also providing the target form (positive evidence) that is appropriate for the specific discourse-pragmatic context (R. Ellis 2007). SLA studies have found that exposure to positive evidence from conversational input alone is not sufficient to attain a native-speaker-like proficiency of an L2 (White 1987, Long 1990, Inagaki and Long 1999, Allen et al. 1990), i.e., they have argued that some explicit instruction, such as in the classroom, is necessary. However, I will argue that classroom instruction alone is likewise insufficient for acquiring native-speaker-like patterns of speech. I will do so by investigating the various types of feedback learners receive from conversational interactions with native speakers, and demonstrating that this feedback includes negative evidence (regarding what utterances are ungrammatical) as well as positive evidence (indicating the correct target form).

The first research question that arises, then, is:

1. **What kinds of explicit and implicit interactional feedback (comprising negative as well as positive evidence) do native speakers provide in conversation with non-native speakers?**

In order to investigate this question, I will focus on the dialogic sequences that arise in conversations among native and non-native speakers that are related to the non-native

speaker status of the L2 learner, such as when native speakers provide L2 feedback in the form of recasts, as explained below.

Conversational discourse is a rich source of linguistic input, containing not just positive evidence in the form of individual grammatical utterances, but also stochastic frequencies of linguistic constructions used in specific discourse-pragmatic contexts. As stated above, whether for a first or second language, speakers are sensitive to the frequencies of linguistic expressions and their contexts of use (N. Ellis 2002; Bybee 2006, 2007, 2010; N. Ellis & Ferreira-Junior 2009), as speakers' mental representations are built up through repeated experience with frequent constructions (Bybee 1985; Abbot-Smith & Tomasello 2006).

Participating in conversations with native speakers exposes learners to L2 input which is crucially embedded in an interactional discourse context. Krashen (1982) takes the view that comprehensible or meaningful input (positive evidence) is necessary and sufficient for L2 acquisition. Although in Krashen's view, classroom instruction (explicit input) might help make natural conversation more comprehensible, explicit knowledge about L2 grammar itself can never be converted into implicit knowledge (Krashen 1981). In contrast, others have argued that explicit knowledge can lead to noticing—a conscious registration of some linguistic phenomenon, which can in turn trigger processes of language acquisition in which the explicit knowledge becomes implicit knowledge (Schmidt 1994, R. Ellis 2005). In other words, explicit knowledge of a grammatical form or structure "makes it more likely that learners will attend to the structure in the input" and compare the positive evidence they have observed with their own output, leading to learning (R. Ellis 2005: 215). While I subscribe more to Ellis' than to Krashen's view, I

think the importance of positive evidence has not fully been recognized by much of the L2 literature, which focuses on negative evidence.

In this dissertation, I make the assumption that positive evidence (language in use) comprising both frequency and contexts of usage plays an important role in native speakers' mental representations of discourse-based grammar. I further assume that naturally-occurring conversational language is notably different from that taught in L2 classrooms, and that these differences have a significant impact on the process of L2 acquisition: participating in conversation exposes L2 learners to positive evidence in the form of naturally-occurring linguistic input by native speakers (as well as some negative evidence). This exposure to language that is dependent on discourse-pragmatic factors is essential for developing a native speaker-like, discourse-embedded mental representation of grammar. This leads to my second research question:

2. **To what extent do the conversational grammars of non-native speakers exhibit the same relationships between grammatical form and discourse function as the conversational grammars of native speakers?**

To address these questions, I will examine the comparative (native versus non-native speaker) usage of three conversation-based phenomena. The conversational phenomena that I will investigate are each dependent on discourse-pragmatic factors that only arise when embedded in a communicative context. These three phenomena are: 1) explicit and implicit (both positive and negative) feedback during naturally-occurring L2 conversations, 2) use of semantically-abstract and contextually-situated Noun-Modifying

Constructions (NMCs) and Generalized Noun-Modifying Clause Constructions (GNMCCs), and 3) (non-)realization of subject arguments based on discourse-pragmatic factors. Native-speaker-like production of the last two phenomena in particular depends on exposure to the contextualized frequencies found in naturally-occurring conversation, and therefore is unlikely to be based solely on L2 textbooks or L2 classroom instruction.

These three case studies of conversation-based phenomena—which are generally not included in curricula, and therefore cannot be acquired solely from L2 classrooms or textbooks—will further our understanding of how conversation through interaction with native speakers helps language learners acquire a discourse-based grammar that mirrors that of native speakers.

1.2. Organization of this Dissertation

This dissertation is composed of six chapters. The current chapter, the Introduction, provides a background to the theoretical framework and assumptions that have shaped this work, as well as a broad overview of previous research related to Japanese, corpus-based methods, and second language acquisition. In doing so, it identifies several gaps in the literature and argues for the necessity of investigating Japanese L2 data in a naturally-occurring conversational context.

Chapter 2, the Data and Transcription chapter, describes the data collection and transcription processes in detail, including information on participating subjects and transcription conventions.

Chapters 3 through 5 comprise three separate case studies of conversational phenomena in Japanese—the native-speaker-like usage of the phenomena examined in Chapters 4 and 5 in particular is dependent on discourse-pragmatic factors and thus could only be acquired from experience with naturally-occurring conversation.

Chapter 3 addresses the first research question, the ways in which explicit and implicit interactional feedback in conversation function as potential learning mechanisms in L2 acquisition. In Chapter 3, following a summary of findings from previous literature on explicit/implicit linguistic feedback in L2 acquisition, I conduct a qualitative analysis of those points in the conversation related to the non-native speaker's language ability, including instances of explicit metalinguistic discussion of lexical items, and of implicit feedback, such as recasts of non-native speaker utterances, in order to examine these instances as potential learning mechanisms. Although feedback, including recasts, is also present in the L2 classroom, non-native speakers may encounter more frequent and varied types of feedback—and invaluable feedback on their contextualized communicative production in real time—from participating in conversations with native speakers; this analysis thus addresses the first research question—how feedback in interaction may serve as a learning mechanism.

Together—as well as individually—Chapters 4 and 5 attempt to address my second research question regarding how patterns of usage differ among less advanced learners vs. more advanced learners vs. native speakers, for each of these discourse-based phenomena.

Chapter 4 presents a qualitative and quantitative analysis of Noun-Modifying Constructions (NMCs), including Generalized Noun-Modifying Clause Constructions (GNMCCs). Following an overview of previous research on NMCs in Japanese, as well as

an explanation of the coding for this analysis, I classify NMC types in Japanese according to their complexity and compare the usage of various types of NMCs among native vs. non-native speakers, based on discourse factors: different types of NMCs are used to modify various semantic types of head nouns to carry out functions such as introducing new referents in the discourse. Additionally, Japanese conversations contain some complex instances of GNMCC constructions that are used to modify head nouns whose referents bear only a semantic or pragmatic relation to the clause; however, such NMC types are not likely to be encountered in L2 textbooks or classrooms. This analysis thus addresses the second research question related to how the experience of participating in conversation helps L2 speakers acquire a native-speaker-like discourse-based grammar.

In Chapter 5, an analysis of Subject Realization, I provide a literature review of previous research on subject realization in Japanese, as well as an explanation of the coding and methodology specific to this analysis. I then conduct a statistical analysis comparing the effects of the discourse-based independent variables of givenness and contrast on the native vs. non-native speakers' realization of subject arguments. Because native-speaker-like realization of subject arguments is based on highly discourse-dependent factors that are lacking or severely limited in frequency in the classroom, this analysis also addresses the second research question on the differences between the form-function relationships observed in the conversational grammars of native speakers vs. more advanced learners vs. less advanced learners.

Finally, Chapter 6 concludes the dissertation, providing a summary of the findings, discussing theoretical and pedagogical implications, and suggesting directions for further research.

Chapter 2. Data and Transcription

2. Data

Data for this study come from a corpus of Japanese Native Speaker (NJS) and Non-Native Speaker (NNS) conversations, which was collected in various cities across Japan in the fall of 2011. The corpus consists of 4 hours of conversational data, comprising twelve 20-minute conversations, each between one NJS and one NNS of Japanese. The 12 conversations were carried out by 24 unique subjects, who volunteered to participate in pairs of two; in all cases these pairs were self-described "friends" (8 pairs), "close friends" (3 pairs), or spouses (1 pair).

In Japanese, speakers' relationships and social status are relevant to the style or register of spoken language used; by selecting only volunteer pairs of friends or spouses, I could ensure the near-consistent use of casual-register Japanese—rather than the distinct polite-register Japanese—throughout the corpus. While many Japanese language textbooks or L2-learning approaches focus primarily on formal or polite registers of the language (typically used among people who have only recently met), communication that takes place in such social settings likely constitutes only a small fraction of the total amount of linguistic interaction in which Japanese native speakers—and many non-native speakers—participate. Previous Japanese L2 speaker corpora have consisted of formal Japanese in artificial interview settings (Hypermedia Corpus of Spoken Japanese), as well as written Japanese compositions (Learner's Language Corpus of Japanese), but no corpus to my knowledge has attempted to capture casual everyday conversation among NNS and NJS speakers who are already well-acquainted with each other, in more natural settings.

2.1. Corpus Participants

The 12 NNS participants had as their L1s either Korean (2), Chinese (2), or English (8); the native English speakers were from the U.S., the UK, Canada, and Australia. Most had taken some coursework in Japanese, while some had learned the language primarily through self-study with textbooks and conversations with Japanese friends. All but one of the NNS participants had been studying Japanese for at least 4 years (self-reported study times ranged from 2 years to 41 years). All but two of the NNS participants had been living in Japan for at least 3.5 years (self-reported time spent living in Japan ranged from 1 month to 26 years). Non-native Speaker participant information is summarized in Table 2.1.

Recording	From	Age	Gender	Lived in Japan for	Studied language for	Main method of study
1-JC	China	26	F	6 years	8 years	Language school
2-JK	Korea	26	F	3.5 years	4.5 years	Language school
7-JE	U.S.	50	M	26 years	27 years	Language courses
8-JE	U.S.	32	M	6 years	8 years	Self-study
10-JE	Britain	58	F	21 years	41 years	Language courses
11-JE	U.S.	17	F	14 years	14 years	Living in Japan
16-JE	Canada	31	F	8.5 years	8.5 years	Private lessons
18-JK	Korea	32	M	4 years	13 years	Living in Japan
19-JC	China	30	M	8 years	11 years	Language courses
24-JE	Britain	26	M	3.5 years	7 years	Language courses
25-JE	U.S.	22	M	1 month	2 years	Language courses
26-JE	Australia	21	M	1 month	4 years	Language courses

Table 2.1. Non-Native Speaker Corpus Participant Information

In Table 2.1, only one "main method of study" is listed for each NNS participant; however, many of the NNSs listed two or more methods, including "self-study"; "speaking with Japanese people, friends, spouses"; or "Japanese movies, TV, and music." Thus, it can be

assumed for any given speaker that in addition to language courses, for example, self-study and socializing with native Japanese speakers were also important methods of studying the language. "Language courses" either at the high school or university level are differentiated from "Language school," which refers to a dedicated intensive Japanese language school program.

Eight of the 12 NJS participants came from the central Chuubu and Kansai regions of Japan; two others were from Okayama prefecture, and two were from Tokyo. Most described themselves as speaking regional dialects, with the two from Tokyo reporting that they spoke *hyoujungo*, or standard Japanese based on the Tokyo dialect. Native Japanese Speaker participant information is summarized in Table 2.2.

Recording	From (Tokyo or Prefecture name):	Age	Gender	Dialect	Relationship to NNS
1-JC	Hyogo	25	F	Kansai-ben	friend
2-JK	Nara	25	F	Kansai-ben	close friend
7-JE	Gifu	40	M	Gifu-ben	close friend
8-JE	Hyogo	32	F	Kansai-ben	spouse
10-JE	Tokyo	40s	F	Hyoujungo	friend
11-JE	Tokyo	19	F	Hyoujungo	friend
16-JE	Okayama	32	F	Okayama-ben	friend
18-JK	Wakayama	28	M	Kansai-ben	friend
19-JC	Nagano	26	M	Kantou-ben	close friend
24-JE	Okayama	32	F	"none"	friend
25-JE	Hyogo	20	F	Kobe-ben	friend
26-JE	Shizuoka	28	M	Tokai-ben	friend

Table 2.2. Native Japanese Speaker Corpus Participant Information

2.2. Addressing the Differing Japanese Levels of Non-Native Speakers

Although all but one of the NNS participants had been studying Japanese for at least 4 years and all but two of the NNS participants had been living in Japan for at least 3.5 years, the Japanese levels of the NNSs varied considerably.

The proficiency guidelines for second language acquisition created by the American Council on the Teaching of Foreign Languages (ACTFL) offer a potential means of assessing the Japanese levels of the non-native speaker corpus participants. However, short of having each non-native speaker engage in an Oral Proficiency Interview (OPI) with a certified ACTFL OPI language tester, my own assessment of the participants that follows—with reference to the ACTFL guidelines—can be only impressionistic at best. Based on the 2012 ACTFL Proficiency Guidelines for Speaking ability, most of the speakers would fit the Advanced level of proficiency. The majority of the speakers are at the Advanced High level, with a few stronger and weaker NNSs, fitting either the Superior level or the Intermediate level. The lowest level speaker is probably at the Intermediate Mid level, with none as low as Intermediate Low.

Notwithstanding this impressionistic assessment, the speakers' levels are in fact quite difficult to determine according to ACTFL guidelines (and in general), since subjects were not speaking formally on a variety of abstract topics, but were recorded having casual conversations with close friends or acquaintances. As such, the subjects of their conversations ranged only insofar as they themselves brought up new topics. However, all speakers demonstrated the ability to hold up their end of the conversation—despite the occurrence of code-switching for individual vocabulary words—and all speakers

initiated/asked questions of their interlocutors. In no case did speakers only answer pointed, concrete questions without trying to ask any themselves.

For the purposes of addressing the research questions in this dissertation, however, I did not attempt to divide or classify speakers according to their levels; there were several reasons for this.

First, it would have been nearly impossible to control for the same Japanese levels among groups of participating L2 speakers. Unlike in studies of first language acquisition, for which children's exposure to the input language can be more tightly controlled, studies of second language acquisition are by nature more difficult in terms of controlling—or even estimating—the subjects' exposure to the input prior to the study. Furthermore, even if precise knowledge of each speaker's amount of exposure to the L2 input were available, that information would likely not be sufficient for determining speakers' relative levels of L2 ability.

Second, it is perhaps a flawed assumption that L2 speakers can be grouped according to their "level" at all, since it is entirely likely that speakers are at different levels with respect to different discourse-pragmatic phenomena, all of which, taken together, contribute to the degree to which an L2 speaker's linguistic production seems native speaker-like.

Third, it would have been difficult to come up with an independent means (beyond that of the ACTFL Proficiency Guidelines) of assessing the speakers' Japanese levels in order to classify them into groups based on level with respect to specific linguistic phenomena. Moreover, such an assessment was not necessary in order to interpret the statistical results of the analyses; where non-native speakers' linguistic behavior differed—

seemingly based on ability, the statistics revealed natural groupings of speakers based on their linguistic behavior, thus serving as a form of assessment in itself, for any given specific linguistic phenomenon.

Due to these issues, it became clear, even from the small corpus that I collected, that speakers could not be classified into groups describing their language abilities based on their relative years of exposure to L2 linguistic input alone. I thus differentiate between speakers' experience and speakers' language ability: I could judge speaker experience only from participant self-reports of time spent studying the language and time spent living in Japan; in contrast, it was more difficult to judge how advanced speakers were, though I attempted to do so by investigating how closely their discourse-functional patterns of usage mirrored those of native speakers.

Of course, it stands to reason that "more experienced" would tend to correspond with "more advanced," but I do not make this assumption; nor do any of my results rely on such an assumption. In addition, I did not have access to longitudinal data, and could therefore not make any inquiries into how L2 speakers' exposure to the input affected their language ability over time.

For these reasons, when I use the terms "more/less advanced speakers" in the dissertation, I mean those speakers are impressionistically more or less advanced in terms of specific linguistic phenomena compared to other speakers in my sample, and based partially on my knowledge of their self-reported experience with studying the language. In other words, this describes only the relative degrees to which those non-native speakers' discourse-pragmatic behavior approximates a typical native speaker's discourse-pragmatic behavior (or that of the native speakers taken together as a group).

2.2.1 Linguistic Backgrounds of Non-Native Speakers

As noted above, the first languages of the non-native speaker participants were English (8), Chinese (2), and Korean (2). However, differences among these speakers' use of L2 Japanese based on their L1 were not examined for several reasons. Beyond the relative scarcity of data for native Chinese and Korean speakers, the primary reason for this is that the participants in the corpus were all fairly advanced in their study of Japanese as a second language, as discussed above. While some scholars have argued that L1 processing strategies play an important role in beginning learners' L2 processing, this role is thought to be far less important for more advanced L2 speakers (e.g., Clahsen & Felser 2006, Dussias & Sagarra 2007), who have had the time and experience to develop interlanguage strategies (e.g., Tarone 1980, Sasaki 1991, Kasper & Schmidt 1996).

One obstacle that lower-level L2 speakers may face in conversations with native speakers has to do with their working memory. Working memory is commonly understood as "the processes that the brain uses to store and manipulate information" (Gass 2013: 288). There is a correlation between working memory and noticing (Mackey et al. 2002), a process that can lead to learning (e.g., Schmidt 1994, Inagaki & Long 1999, Ellis 2005). Similarly, scholars have found a relationship between L2 working memory and comprehension of syntax (Miyake & Friedman 1998). Nevertheless, scholarship has also emerged suggesting that individual differences between L2 speakers may actually be just as important as—if not more important than—speakers' native languages, as correlations have also been discovered between L1 and L2 scores on working memory tests (Miyake 1998, Mackey et al. 2002). In other words, individual speakers who have a high capacity

for working memory in their L1 tend to have a similarly high capacity in their L2; and conversely, individual speakers with low capacities for working memory in their native languages tend to have similarly low capacities in an L2. This correlation depends on proficiency, however: there is a weaker correlation with lower-proficiency learners (Service et al. 2002, Gass & Lee 2011). That is, there is a bigger difference in working memory abilities between L1 and L2 for lower-proficiency learners, while working memory abilities in the two languages are more similar to each other for higher-proficiency learners. Such findings suggest a minimal role for L1 influence on L2 processing as speakers become more proficient in their L2, although individual differences still play a significant role in processing, attention, and learning. In the quantitative analyses that follow (in Chapters 4 and 5), I use mixed-effects models to examine the behavior of individual speakers, taking into consideration the variation in linguistic behavior among individuals, rather than only the difference between the behavior of the native versus non-native speakers as groups.

In addition, Schachter (1992: 44) has found that beginning L2 learners use observation, hypothesis formation, and hypothesis testing based on their individual "constraints" on inferencing, imposed by previous knowledge; this previous knowledge includes the learners' knowledge of their L1 grammatical system, as well as their imperfect knowledge of the L2 system, and their expectations regarding the target language, conscious or otherwise. Speakers of an L2—whether they share the same L1 or not—can then make either similar or different hypotheses to account for a particular set of data; in other words, they could assume that the L2 is either the same or different from their L1 in a certain domain. While one's L1 knowledge undoubtedly has influence on one's L2

production and acquisition, Schachter (1992: 38-39) thus demonstrates that one's L1 has as much influence on the learning of an unrelated second language as on the learning of a related one. That is, native speakers of languages with quite similar structures to Japanese, like Korean, and speakers of languages that differ significantly from Japanese, like English, might still make similar—correct or incorrect—inferences about a certain domain of Japanese grammar, based not only on their native language, but on their imperfect knowledge of Japanese grammar as well as their unconscious expectations about the language. Though Schachter makes a convincing case, she does not seem to consider the role of formal or classroom instruction, which at times may eliminate the need for hypothesis formation or testing on the part of the L2 learner. Nevertheless, her perspective on L1 influence is worth considering as an argument for the unpredictability of language transfer, based on one's native language alone; once again, individual differences may outweigh the influence of the various native languages of L2 speakers. While L1 influence is not a focus of this dissertation, individual differences and differences based on speakers' various amounts of experience with the L2 are discussed throughout the present study, when statistical analyses have shown them to be relevant.

2.2.2. Grammaticality

In this dissertation, I discuss linguistic examples from my data—a corpus of conversations between both native and non-native speakers—and I use these examples from spoken, naturally-occurring Japanese conversations to illustrate linguistic phenomena in Japanese. At times, this includes utterances produced by the non-native speaker participants in the

corpus. While it may seem unusual to use non-native speaker utterances as examples of grammatical Japanese, I use only those utterances that have been deemed grammatical by my native Japanese speaking research assistant[1] for such purposes. In other words, all of the utterances I use to illustrate generic characteristics of spoken Japanese grammar have been judged to be grammatical by my Japanese research assistant, unless otherwise noted—as when I include an example specifically to discuss why it would not be considered grammatically or discourse-pragmatically appropriate.

2.3. Transcription

The recordings in the corpus were transcribed in Romanized Japanese in a slightly-adapted version of DT2 (Du Bois 2006), as explained below. DT2 is a revision of DT1, a discourse transcription system originally developed for the transcription of the Santa Barbara Corpus of Spoken American English (Du Bois 1991, Du Bois et al. 1992, Du Bois et al. 1993). The goal in designing the transcription system was to "represent in writing those aspects of a given speech event … which carry functional significance to the participants … in a form that is accessible to analysis" (Du Bois et al. 1992: 3). The DT1 transcription conventions, including many of the symbols used, were later revised into the DT2 system of discourse transcription (Du Bois 2006).

One of the most basic features of both DT1 and DT2 is the indication of intonation units (IUs), a fundamental unit of speech production in spoken discourse (Chafe 1979,

[1] I thank Mikuni Okamoto for her help in identifying L2 errors in my transcripts.

1987; Schuetze-Coburn et al. 1991; Du Bois et al. 1993), defined as "a sequence of words combined under a single, coherent intonation contour" (Chafe 1987:22). In both DT1 and DT2, intonation units are each given a separate line, with IU boundaries indicated by carriage returns. Intonation contours at the end of each IU are marked with one of four symbols: . , ? – to indicate final intonation, continuing intonation, rising intonation (appeal), and truncated intonation units, respectively.[2]

While DT1 and DT2 allow for a very delicate or narrow transcription, including transcription of vocalizations, marked qualities of speaking, and other aspects of phonetic detail, I have used a much broader level of transcription delicacy, representing only the more fundamental features, including words, speakers, IUs, intonation boundaries, pauses, laughter, uncertain hearings, and lengthening. I also chose to adapt some of the DT2 symbols for the purposes of the present study. For example, my transcription was not detailed enough to indicate glottalization (usually marked with %); I was therefore able to co-opt the use of this symbol to better suit the needs of my L1-L2 data, using it to indicate code-switching, i.e., words spoken in a language other than Japanese, such as the non-native speaker's L1. In addition, symbols such as % for code-switching, @ for laughter, and # for unintelligible words were used to the left of a word, rather than potentially appearing in the middle of it (e.g., *@word* versus *wo@rd*), thus allowing for more accessible searching of the corpus.

Transcription was conducted using the program ELAN, which allows for a time-aligned transcription, separated into different tiers attributed to each participating speaker, and with each intonation unit transcribed in a new cell. The ELAN files were later exported

[2] In DT2, the rising intonation (appeal) contours are marked with either ?. or ?, to distinguish between "appeal (final)" and "appeal (continuing)" (Du Bois 2006: 1). However, the system used here groups these together into a single appeal category (indicated with ?), as in DT1.

to a spreadsheet in MS Excel with one IU per row in the Excel spreadsheet, and start and stop timestamps for each utterance in columns to the right. However, for the purpose of coding each clause in the data for specific analyses (as described in subsequent chapters), some IUs that contained more than one clause were then allotted additional line(s) on the spreadsheet—one per clause—with notes to indicate that those clauses were originally part of the same IU. Due to the time-aligned nature of the ELAN transcript, and the start and stop timestamps of each IU appearing alongside the transcription in the spreadsheet, there was no need to time or transcribe long pauses in between IUs. Likewise, overlap was not explicitly indicated in the transcript because this could be viewed from the timestamps exported from ELAN to the spreadsheet. Short pauses (inside IUs) were transcribed, as in DT2, with the symbol .. while longer pauses (inside IUs) were timed and transcribed as, e.g., (1s) or (2s) for 1 second or 2 seconds, respectively.

Rather than using names or pseudonyms, the speakers' turn attributions were indicated using the recording number followed by "JE," "JC," or "JK" for non-native speakers whose first language was English, Chinese, or Korean, respectively, in addition to a "NNS" or "NJS" label for non-native versus native Japanese speakers. For example, the speaker attribution "19-JC NJS" would indicate that an utterance was produced by the native Japanese speaker in Recording 19, a conversation that took place with a non-native speaker whose first language was Chinese.

Each transcription was thoroughly double-checked by a native Japanese speaker.[3] The corpus contains a total of 14,339 intonation units, 7053 produced by the native

[3] I thank Nobutaka Takara and Mikuni Okamoto for their help in checking the accuracy of my transcription of the corpus.

Japanese speakers, and 7286 produced by the non-native speakers.[4] Not all of these intonation units contain clauses, however; some IUs consist solely of backchannel reactive tokens, false starts, interjections, or other non-propositional utterances. In addition, some clauses stretch across multiple IUs. The corpus contains a total of 6,883 clauses, 3790 produced by the native Japanese speakers, and 3093 produced by the non-native speakers. (Of the 6,883 clauses, 55% have verbal predicates, 24% nominal predicates, and 21% adjectival predicates.)

Throughout the dissertation, specific examples of utterances from the corpus are presented using the following notation (or a slight variation of it, as described below). Examples are numbered and labeled with the recording number and speaker tag (NNS vs. NJS). The IU number appears below the recording/speaker attribution; in examples with multiple IUs attributed to a single speaker, the speaker attribution appears only in the top line. The data are given in a standard three-line morphological gloss format, as in the following example:

(1)	24-JE NJS	*iroirona*	*koto-ga*	*benkyou*	*dekiru*	*kara,*
	(IU 725)	various	things-NOM	study	be.able.to	since,
		'since (one) can learn about various things [when living abroad],'				

The top line contains the Japanese utterance; the second line the morpheme-by-morpheme gloss; the third line the free translation. Information given in parentheses in the free translation line indicates non-overt mentions of a referent, such as when a subject or object argument is not overtly realized, but is understood from the pragmatic context. Notes that

[4] This relatively even distribution of talk, based on IUs, across NJSs versus NNSs was seen in most of the individual recordings as well, although in some conversations the NJS produced closer to two-thirds of the IUs, while in other conversations the pattern was reserved.

appear in square brackets in the free translation line indicate additional information that is available from the discourse-pragmatic context; these serve to clarify the speakers' utterances, since it is not possible to present them in their full context here due to space limitations.

A variation on this notation is used for examples with multiple turns: the recording number and the first IU number are given in a row that appears just above the transcription, and each line below is given a line number and attributed with either "NNS" or "NJS."

(2) The speakers have been discussing the health of the non-native speakers' parents.

[Recording: 1-JC, IU 1159]

1	NJS	*otousan*	*ikutsu*	*na*	*no?*		
		father	how.old	IUFP	IUFP		
		'how old is (your) father?'					
2	NNS	*gojuu.*					
		fifty					
		'fifty.'					
3	NJS	*a*	*issho*	*gurai*	*na*	*no [nan]*	*#da*	*#ne.*
		ah	same	about	IUFP	IUFP	COP	IUFP
		'ah about the same (age) [as your mother].'						
4	NNS	*a*	*mou*	*gojuuichi-ni*	*nat-ta*	*wa.*		
		ah	already	fifty.one-OBL	become-PST	IUFP		
		'oh actually (he) already turned fifty-one.'						

In line 3 of example (2), the two IU-final particles, *na no*, have an additional notation after them in the top line: *[nan]*. This indicates the phonetic realization of *na no*, pronounced together as *nan*, as explained in more detail in the following section.

2.3.1. Romanization of Japanese Orthography

Japanese uses a combination of several different writing systems: *hiragana*, for native Japanese words; *katakana*, for loan words or occasionally for emphasis; *kanji* (Chinese characters), for both compound words of historically Chinese origin and native Japanese words (hence many kanji have more than one pronunciation depending on context). The Roman alphabet, referred to in Japanese as *romaji*, is also occasionally used for loan words, proper nouns, or emphasis.

There is no single standard way to spell Romanized Japanese. It therefore seemed most natural to transcribe spoken Japanese using one of the more common English keyboard input methods used for typing in the Japanese writing system. Because hiragana and katakana are syllabaries, Japanese keyboard input methods for English keyboards can be quite simple and straightforward, allowing one to essentially type Japanese as spelled using English letters; each (usually) CV syllable is then converted into hiragana, katakana, or kanji as it is typed. (For example, typing the two letters "K-O" on an English keyboard would yield the single hiragana symbol for the syllable *ko* in Japanese; while typing "K-O-D-O-M-O" would yield the three hiragana symbols for the syllables *ko-do-mo* with an option to convert all three into the two kanji characters for the Japanese word *kodomo*, 'child'.)

For simplicity, ease, and speed of transcription—and to eliminate the need to regularly insert specialized characters—I chose to represent Japanese orthography in this corpus using the spelling required for this type of Japanese keyboard input method. Because of this, some Romanized spellings of Japanese in my corpus may differ from

other common ways of spelling Japanese words. For example, the long vowels in Japanese are sometimes represented as ō or ē; alternately they are often Romanized as “oo” or “ee”. I have chosen to Romanize them instead as “ou” and “ei,” as they would be typed on a keyboard, and indeed as they are spelled in hiragana (おう and えい). This results in Romanizations such as *hou* ‘direction,’ and *jugyou* ‘class’. I make an exception, though, for words that would normally be written in katakana, which would be typed on a keyboard as “o-” or “e-” to elicit a katakana dash representing a long vowel (オー or エー): I Romanized these vowels as “oo” or “ee” instead of using the dash. Therefore, although they represent the same sound, the last vowel (ē) in the native Japanese word *kirei*, ‘beautiful’ is spelled “ei” while the last vowel (ē) in the katakana loan word *karee*, ‘curry’ is spelled “ee.”

Similarly, I spell Japanese dʒ with “j”; Japanese tʃ with “ch”; and Japanese ʃ with “sh”. I spell the (somewhat rare) voiced version of the Japanese syllable “tsu” as “dzu”. Although the Japanese nasal n (the only syllable coda in Japanese) often assimilates before other consonants, I consistently spell this as “n.” Double consonants in the transcription represent Japanese geminate consonants. Where syllable breaks within words are unclear in the Romanization, they are represented with a「'」symbol, as in the word *kin'iro* ‘gold color’. The first word of each IU or sentence was not capitalized; only proper nouns (such as *Oosaka* ‘Osaka’) were capitalized.

In order to facilitate both reading and searching of the corpus, spaces were used to represent word boundaries; however, the best way to define a word is complicated in any language, particularly so in Japanese, which does not use word boundaries in its own writing system. I used word boundary decisions similar to those used in the JPN PacRim

Corpus of Spoken Japanese[5], but with some small differences. (Note that I am not at all making a theoretical claim about Japanese word boundaries simply by choosing how to represent them in my transcription for the purposes of the present analyses.) Many combinations of interactional final particles or particles and the copula are semi-lexicalized and used as discourse markers; I spelled these frequently collocated combinations as single words (e.g., *janai, kana, toka, darou,* etc.). Other combinations for which each part did not, impressionistically, seem to be as strong of a predictor of the other's co-occurrence, were spelled as separate words (e.g., *yo ne*, *de wa*, *da kke*, *da tte*, etc.). For several similar combinations, the orthography depended on the context, e.g., ___ *de mo* when used to mean 'even at ___', versus *demo ne,* 'but you know,'. In a similar way *tabeteinai* 'haven't eaten yet' was written as a single word, while *tabete wa inai* 'haven't eaten yet' was written as separate words.

A negative morpheme after the predicate was treated as part of the predicate (i.e., the same word), yielding: *tabenai, tabemasen, ikitakunai,* etc. In fact, I chose to spell nearly every variation on verbal morphology as a single word along with the verb stem (e.g., *ittari, ittemo, shitekureru, shiteageru, kaitearu, itteiru, itteinai, tabehajimeru, wakareteshimatte, kacchau, wakariyasui, wakariyasuku, hazuresugi, ittemiru, ittemitai, konakunatta,* etc.). The only exceptions to this were perhaps the *shi+ni* '(movement) to VERB' construction, for which I treated the components as separate words, e.g., *tabe ni itta* 'went to eat'. In addition, the light verb *suru* 'do' was considered to be a separate word from the kanji compound words (nouns) that it follows in forming verbs, e.g., *benkyou suru* 'to study'.

[5] The JPN PacRim Corpus of Spoken Japanese was created by Tsuyoshi Ono (University of Alberta) and his colleagues.

The Romanization of verb-like (*-i*) adjectives followed similar principles; however, whereas adjectives were sometimes written together with their following morphology as a single word (e.g., *ookisugiru* 'too big'), they were considered to be separate words in specific instances (e.g., *nagaku naru* 'become long; get long'). Noun-like (*-na*) adjectives were written as single words if followed by *na*, e.g., *kireina* 'beautiful', *jouzuna* 'good.at'. Nouns were written as single words with specific derivational suffixes, such as *otonappoi* 'adult-like'.

Case-marking postpositional particles were transcribed as their own words but were often joined together with the word they follow (using a hyphen) in the examples presented in this dissertation, for the sake of clarity. (See, for example, *-ga* (NOM) in (1) above or *-ni* (OBL) in (2) above.) Expressions such as *konna ni* 'this much' and *sonna ni* 'that much' were written as separate words, as were expressions such as *kou iu* 'this kind of' and *sou iu* 'that kind of'.

Commonly lexicalized phrases were written as single words (e.g., *kamoshirenai* 'maybe', *atode* 'later', *nandemo* 'whatever,' *doushite* 'why', *douyatte* 'how', and *kakkouii* 'attractive').

Honorific suffixes were indicated using hyphens (e.g., *Yamada-san*, *Kumi-chan*, etc.), although suffixes that are themselves lexical were written as separate words (e.g., *Yamada sensei*). Honorific prefixes were also indicated using hyphens (e.g., *o-kane*, *o-uchi*, *o-mizu*), unless nearly completely lexicalized (e.g., *omiyage, otousan*). Other examples of non-lexicalized prefixes and suffixes being indicated by hyphens include *chou-kowakute* 'super scary', *sensei-tachi* 'teachers-PL', *Kyoto-eki* 'Kyoto station', *teema-teki* 'thematically', *sasupensu-kei* 'suspense type (movies)', etc.). The use of certain suffixes

was sufficiently lexicalized to justify being written without the hyphen in some cases (e.g., *nihonjin* 'Japanese person', *amerikajin* 'American'), but not in others (e.g., *Tenshin-jin* 'person from Tenshin').

Counter classifiers were written attached to the previous morpheme and with no hyphen, e.g., *ichiban* 'number one', *sanbanme* 'the third (one)', *sanjikan* 'for three hours' *nanajuuen* 'seventy yen'.

Instances of the emotive particle *no*, often pronounced *n* as in *n desu* were treated as separate words. For example, *suru n da na* '(they) do that, don't (they)?'. This particular morpheme, however, introduces an interesting dilemma in the Romanization of spoken Japanese.

Since Japanese is usually written (in the syllabaries of the Japanese writing systems, hiragana and katakana) with a near one-to-one correspondence between symbol and sound, the issue that arises is whether to faithfully spell words exactly as pronounced in all cases, or to consistently spell them in a more conventionalized way, regardless of their phonetic realizations. Though not necessarily useful for this dissertation, for the sake of others who may use the corpus in the future, I recorded both the non-standard pronunciations and conventionalized spellings in my transcription system, using underscores to link the standard spelling with the phonetic realization without spaces between them, as in "word_pronunciation" (this had the advantage of not creating extra words by introducing extra spaces into the transcription, and of not introducing any characters such as [ ] or ( ) that might interfere in searches using regular expressions).

Thus, the utterance *suru n da na* '(they) do that, don't (they)?' was transcribed, "suru no_surun da na," indicating that the emotive morpheme *no* was in this case reduced

and pronounced as a syllable coda *n* on the verb *suru* 'do'. Likewise, *itta n da* 'so (they) went', was transcribed, "itta no_ittan da." This type of system to indicate the phonetic realization following an underscore was useful not just for the emotive morpheme *no*, but in many other cases of phonetic variation as well, including:

a) itteimashita_ittemashita 'was saying'
b) watashi_atashi 'I'
c) sore de_nde 'and then/so'
d) yappari_yappa 'well; after all'
e) tokoro_toko 'place'
f) wakaranai_wakannai 'don't understand'
g) funiki_fuinki 'atmosphere'
h) sou na no_nan da 'is that so' (vs. nan da 'what's that?')
i) yoku_you 'often; well'

Using this transcription convention, lengthening could also be conveyed without disrupting the ability to search the corpus: relative lengthening was represented by one or more colons immediately after the lengthened sound in the phonetic realization of the word, as in word_wo:::rd; the first version of the word was therefore searchable, while the second—interrupted by the colons—gave the phonetic realization.

The other main advantage of this type of system for recording the phonetic realization of words is that each word then has one standard, searchable spelling, possibly followed by its particular phonetic variation in each context. For words with more than one

acceptable standard, conventionalized spelling (such as *amari/anmari* 'not very'), I chose only one to use in the corpus (in this case, "amari"), recording variations in its pronunciation using the underscore, as in "amari_anmari" or "amari_am:a." The same applies to the discourse marker *maa* 'well', which I chose to spell with a long vowel, "maa" despite it also frequently being pronounced as "maa_ma." However, to simplify the transcription process, I did not choose one standard spelling for the very frequent backchannel responses including *un*, *mm*, *hm*, *hun*, etc., but simply spelled them all differently, as close to the way they were pronounced as possible.

Although I used this underscore system to indicate phonetic realization in my original transcription of the corpus (so that the words could be searchable, without increasing the word count by introducing extra spaces), the examples presented in this dissertation instead use the notation seen in example (2) above (i.e., *na no [nan]*, rather than "na no_nan").

Many different Japanese dialects are represented even in the small, 24-participant corpus used for this study. This, too, presented a challenge in terms of transcription, as within each dialect, many words—verbal morphology in particular—could be said to have a spelling that is relatively standard and conventionalized for that dialect, but that differs from that of *hyoujungo* or Tokyo dialect. Kansai-ben (Kansai dialect from central Japan) perhaps differs the most from *hyoujungo*; at least five of the 12 recordings contained uses of Kansai-ben (Kobe-ben is a type of Kansai-ben). For this reason, I allowed Kansai-ben spelling (corresponding to the pronunciation) of certain suffixes, where for other dialects—less common to my corpus—I have simply regularized the spelling to what it would be in *hyoujungo*, following the word with an underscore and its pronunciation. My reasoning

was that eliminating this extra step in those recordings that contained Kansai-ben would both save time in creating those transcriptions and would make those transcriptions read more clearly as they would be less cluttered. The only disadvantage is that now in order to search for a negative morpheme, for example, I need to conduct two different searches: one for the *hyoujungo* negative morpheme *nai*, and one for its counterpart in Kansai-ben, *hen* (e.g., *wakarahen* 'don't understand', *kamoshirahen* 'maybe'). In addition, I allowed the Kansai (and other regional dialects') pronunciation of the copula as *ya* (versus *da*) to be transcribed with the variant spelling; this extends to discourse markers and conjunctions formed with the copula such as *yatta* (vs. *datta*), *yattara* (vs. *dattara*), and *yarou* (vs. *darou*).

For other cases, even with some less frequent Kansai-ben expressions, I standardized the spelling in the transcription, adding an underscore and the phonetic realization (e.g., "janai ka_yanka," "janai_yan," "na no da_yanen," and "no da_nen"). Other dialects' morphology that differed from that of *hyoujungo* did not receive the same treatment as standard Kansai-ben but was instead transcribed in a standardized spelling, e.g., the *–haru* honorific suffix in the Kyoto region dialect, as in *kaiteiru_kakaharu* 'is writing'.

2.4. Methodology

The three case studies in this dissertation (Chapters 3, 4, and 5) each rely on different methodological approaches to the data. Chapter-specific background information and methods will therefore be discussed in each of the three chapters that follow.

Chapter 3: When L2 Learners Speak Non-Natively

3.1. Background

Many non-native speakers are first exposed to a second language in a classroom setting. Although the classroom is where much of their beginning-level learning may take place, the language used in a classroom can only approximate that encountered outside it: non-native speakers may be confronted with a range of interactional and linguistic phenomena in naturally-occurring interactions that are difficult to predict or approximate in a language course. Though beginning learners may struggle to understand native speakers outside of the classroom, as soon as L2 learners are past the initial hurdles of beginner-level vocabulary and grammar, they are better situated to benefit from conversational interaction with native speakers (Pica 1994). The central question here is: **how does conversation with native speakers support learning?**

Second language acquisition (SLA) theoreticians have assumed that both positive evidence (the target language in use) and negative evidence (feedback regarding what utterances are ungrammatical) serve as learning mechanisms. Whereas first language acquisition researchers have assumed a minor role for negative evidence compared to that of positive, L2 acquisition researchers have assumed that successful acquisition cannot occur with positive evidence alone (White 1991). This chapter provides a broad qualitative overview of some of the NJS-NNS interactions in the corpus, before the data are explored in more quantitative detail in subsequent chapters. This chapter thus serves as the first of this dissertation's three case studies of Japanese conversations between native and non-native speakers; specifically, it examines the types of evidence, including negative

evidence—feedback on the grammaticality of their speech, available to L2 learners in conversations with native speakers.

In naturally-occurring conversational interaction between native and non-native speakers, Long (1983) has shown that native speakers modify their speech in a variety of ways in order to avoid communication breakdowns, including checking for comprehension, requesting clarification, tolerating ambiguity, and repeating utterances. These types of behavior fall under the category of what is termed "negotiation for meaning" in the field of SLA (Long 1996), an interactional activity engaged in by conversational participants, which is triggered by communicative difficulties or trouble spots in the conversation (Long 1981, 1985, 1996; Pica 1992; Mackey et al. 2000; R. Ellis et al. 2001; Foster and Ohta 2005). While these types of negotiation for meaning serve to facilitate communication in real time, some aspects of this negotiation may be beneficial to the non-native speakers in the long term; in particular, many SLA researchers have shown that interactional feedback is positively associated with L2 learning (Mackey and Gass 2006, Inagaki & Long 1999, Mackey & Philp 1998). Feedback may consist of explicit (direct) error corrections or metalinguistic information (Mackey 2007, R. Ellis 2007); perhaps more often, feedback may be implicit (indirect), consisting of clarification checks, repetitions, or recasts (e.g., Long et al. 1998, Lyster 1998, Braidi 2002, Nabei 2002).

The indirect negative evidence (implicit feedback) that language learners receive from native speaker 'recasts,' has been a frequent topic of research, both in conversation analysis and in the field of SLA (Egi 2007, Nabei 2002, Ohta 2001, R. Ellis 1999, Lyster 1998, Mackey & Philp 1998, Heritage 1984). Recasts or reformulations convey the same semantic information and discourse functions as the learner's utterance, while changing

only the formal properties of the utterance; for example a native speaker might re-state a non-native speaker's clause using the same subject and verbal predicate, but substituting a correct case-marking particle for an incorrect one. Thus, when an utterance is reformulated, the learner has the potential to make a direct comparison between the two formulations, with the knowledge that the recast utterance has occurred in the specific discourse context in which that learner expected another (his or her own) formulation to occur (Boyd & Goldberg 2011: 58). In other words, this contrast of semantically equivalent utterances within the same specific discourse context allows 'noticing' to occur, as discussed below.

Negative evidence in the form of corrective repetitions has been theorized to facilitate acquisition of grammar by drawing attention to the contrast in formulations while both forms are easily held in auditory working memory (MacWhinney 2004). The functional redundancy of the utterances reduces the hearer's processing load and frees processing capacity for the learner's attention to the correct formulation (Camarata et al. 1994); this redundancy in content thus promotes the learner's focus on the contrast in form (Ohta 2011: 144). The recast in effect forms a "minimal pair" with the learner's original statement, focusing the learner's attention on the differences between the structures. In contrast, instances of positive evidence alone (grammatically correct formulations produced noncontingently to erroneous formulations) must be maintained in working memory while learners necessarily contrast them with their own mental representations in order to process the input (Baker & Nelson 1984). Therefore, compared to positive evidence, corrective recasts or reformulations (negative evidence) allow for easier comparison between two formulations within a specific context, while minimizing

demands on working memory (Bohannon & Stanowicz 1989, Nelson 1991).

In order for learning to take place, both learners' attention to and their noticing of a certain aspect of the target language is necessary (Schmidt 1990, 1995). Schmidt defines "noticing" as the "conscious registration of the occurrence of some event" (1995: 29), and points out that attention has been called a "mechanism" for noticing (Jackendoff 1987, cited in Schmidt 1995: 18). Long's (1996) Interaction Hypothesis suggests that in conversations between native and non-native speakers, negotiation for meaning elicits interactional adjustments including negative feedback, which may function as a learning mechanism in facilitating L2 acquisition: negative feedback draws the learner's attention to the contrast in linguistic form, which induces noticing—a necessary precursor of learning (Inagaki & Long 1999).

As implied above, feedback in the form of error corrections or recasts can simultaneously convey both negative and positive evidence (Schachter 1991), i.e., the native speaker's feedback indicates that what the non-native speaker has said is incorrect as well as what the correct target form should be (R. Ellis 2007), thus drawing learners' attention to the mismatch or contrast in linguistic form (Long 1996). Explicit feedback in the form of metalinguistic explanation may provide more—potentially helpful—information as to the nature of the learner error (R. Ellis et al. 2006), but it may only provide negative evidence, without the native speaker actually supplying the correct form (Loewen and Nabei 2007).

While several studies have demonstrated that explicit feedback is more effective than implicit feedback for L2 development (Carroll and Swain 1993, Carroll 2001, Rosa and Leow 2004, R. Ellis et al. 2006), other SLA studies have demonstrated the

effectiveness of implicit feedback (Doughty and Varela 1998, Mackey and Philp 1998, Han 2002, Leeman 2003). In contrast to explicit feedback, implicit feedback contains "no overt indicator that an error has been committed" (R. Ellis 2007). Recasts are one of the most frequent forms of implicit feedback (R. Ellis et al. 2001, Lyster and Ranta 1997). Lyster defines a recast as "an implicit reformulation of the [learner's] nontarget utterance" (2004: 331). However, Nabei points out that due to the contrastive—and thus salient (Schmidt & Frota 1986)—nature of recasts, they could perhaps more accurately be described as a different type of explicit rather than implicit corrective feedback (2002: 10).

Explicit feedback, in particular the explicit language instruction that occurs in L2 classrooms, leads to learners' so-called "explicit knowledge" of the L2 grammatical system; this includes a conscious awareness of the "rules" of the language, including what is ungrammatical. In contrast, knowledge gained from "implicit learning" is not accessible to consciousness (Seger 1994); rather, "implicit knowledge" is a speaker's subconscious internalization and routinization of the language's grammatical system. Goldberg (2006: 82) classifies as "implicit" learning, any learning for which no direct instructions are given to the learners, and learners are unable to articulate explicitly the meaning of the structure(s) they have learned. In the process of implicit learning, learners' exposure to linguistic input leads to the entrenchment of frequent constructions as speakers' grammatical systems are built up through repeated experience (Bybee 1985; Abbot-Smith & Tomasello 2006).

Just as the "knowledge" that most native speakers have of their own native language is subconscious; presumably the goal of most L2 learners is to attain the same type of subconscious, implicit knowledge of their L2. SLA scholars have argued that

explicit knowledge (usually from classroom instruction) can lead to noticing, which can in turn trigger processes of language acquisition in which the explicit knowledge becomes implicit knowledge (Schmidt 1994, R. Ellis 2005). In other words, explicit knowledge of a grammatical form or structure "makes it more likely that learners will attend to the structure in the input" and compare the positive evidence they have observed with their own output, leading to learning (R. Ellis 2005: 215). In contrast, Krashen (1982) takes the view that comprehensible or meaningful input (positive evidence from exposure to linguistic input) is necessary and sufficient for L2 acquisition. Although in Krashen's view, classroom instruction (explicit input) might help make natural conversation more comprehensible, explicit knowledge about L2 grammar itself can never be converted into implicit knowledge (Krashen 1981), i.e., cannot itself lead to attaining a native speaker-like mastery of the language.

Much of the research on the effects of various types of L2 feedback has been conducted using experimental data (Mackey et al. 2000, Mackey and Philp 1998, Carroll and Swain 1993) or classroom discourse (Ohta 2000, Lyster 1998, Doughty 1994). In contrast to Krashen's (1982) view that comprehensible or meaningful input is necessary and sufficient for L2 acquisition, many studies have found that exposure to—or immersion in—conversational input alone (positive evidence) is not sufficient to attain native-speaker-like production of an L2 (White 1987, Long 1990, Inagaki and Long 1999, Allen et al. 1990); some classroom instruction is necessary. However, I will argue that classroom instruction alone is likewise insufficient for achieving native-speaker-like proficiency.

Language courses confined to the classroom are only able to select and mimic certain aspects of natural conversational processes; likewise, experiments (or pre-test/post-

test format studies) focus on the acquisition of very specific linguistic skills in controlled, non-naturalistic conditions. The first step, then, in conducting a usage-based study of positive/negative evidence in naturally-occurring conversations is to discover exactly what non-native speakers experience during conversations with native speakers.

In order to expand our understanding of the empirical resources that a non-native speaker (NNS) will encounter in interacting with native speakers, I will address the broad question: **What happens in naturally-occurring conversation when the NNS speaks non-natively?** I will investigate this by asking **what is the full range of dialogic types of exchange in conversation that relate to the NNS status of the L2 learner?** I include in this range any interactions that make the non-nativeness of the NNS relevant. (Although I do not approach my analysis within the framework of conversation analysis, I borrow from CA the notion of conversational participants 'making relevant' their own (differential) language expertise, through their observable conversation.)[6]

More specifically, this chapter concentrates on the second research question introduced in Chapter 1: **What kinds of explicit and implicit interactional feedback (comprising negative as well as positive evidence) do native speakers provide in conversation with non-native speakers?**

[6] Hosoda (2006) adopts Rampton's (1990) usage in representing speakers' linguistic abilities with the concept of 'expertise' instead of that of 'nativeness'. She argues that differential language expertise, "like any other social category or attribute, is not primarily subject to an outside observer's judgment" (Hosoda 2006: 26). Hosoda therefore treats speakers' language expertise as other social categories are treated in conversation analysis (CA), by discussing it only when it is made relevant "by the participants themselves through their observable orientation to linguistic matters" (2006:26, see also Drew and Heritage 1992 and Schegloff 1991). Although I do not adopt a strict conversation analytic approach in this analysis, I borrow this notion from CA of points in the conversation at which participants 'make relevant' their (differential) language abilities, as below, when I discuss moments at which the NNS or the NJS makes relevant the NNS status of the learner.

3.2. Types of Exchange Related to the L2 Learner's NNS Status

In the following sections, I will first classify the types of dialogic interactions that occur when the NNS makes an L2 error. Secondly, I will consider exchanges in which the learner has not necessarily made an error, but nevertheless somehow makes his or her status as a NNS relevant, leading to some form of native Japanese speaker (NJS) feedback. Thirdly, I will examine those instances where the NJS makes his or her interlocutor's NNS status relevant. These last cases are initiated by the NJS; they are unsolicited but not necessarily unwelcome from the perspective of the NNS.

3.2.1. What Happens when the NNS Speaks Non-natively? Learner Errors

This section will explore three broad categories of dialogic sequences following non-native speaker L2 errors in naturally-occurring conversation. As a whole, NNS errors were remarkably rare in the corpus used for this study, perhaps due to several factors, such as: the high Japanese proficiency level of most of the NNS participants; accommodation to the NNS status of the participants by native speakers in conversational interactions (sometimes including co-construction); and the fact that in the naturally-occurring interactions, the NNS had a role together with the NJS in controlling the choice of topics of conversation.

It is not always clear, especially in advanced L2 speaker interactions with native speakers, exactly what counts as an 'error,' particularly if discourse-pragmatic non-native but grammatical missteps are to be included. There is evidence that even a native Japanese speaker, carefully parsing the corpus transcriptions, cannot catch every such instance of

non-native usage related to pragmatics or discourse context; for the purposes of the present analysis, transcripts were therefore scanned—both by a native Japanese speaker[7] and myself—for more objective types of lexical/grammatical errors (coding significant pronunciation errors as lexical errors), including any cases that were treated as errors by one or both of the speakers. All such cases were then identified and coded for this chapter; this yielded exactly 100 tokens of NNS errors, out of a total of 7286 NNS-produced intonation units (around 1% of their total IU production).

Non-native speaker errors fell into one of three types according to how that error was treated in subsequent interaction. These types are as follows: 1) NNS self-corrects, 2) NJS recasts the NNS error, 3) NJS does not correct the NNS error. The frequencies of each type of error sequence in the corpus as a whole are given in Figure 3.1.

[7] I would like to thank Mikuni Okamoto for her help in identifying L2 errors in my transcripts. A native Japanese undergraduate studying linguistics at a university in Kyoto, Mikuni studied abroad for one year at the University of California, Santa Barbara, during which time she served as my research assistant on various projects related to the data and research for this dissertation. Prior to the 10 months or so that she spent in California, Mikuni had not spent any significant amount of time outside of Japan that would plausibly have affected her native speaker intuitions.

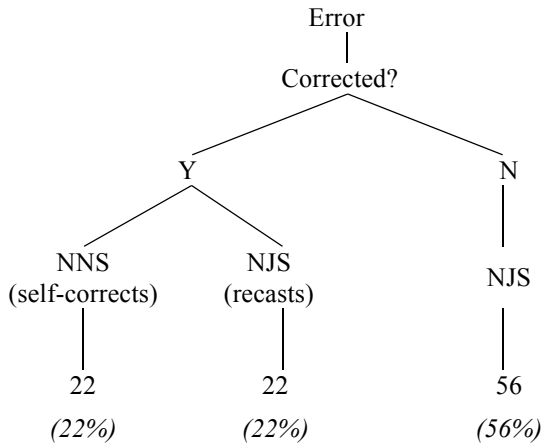

Figure 3.1. Frequencies of types of error sequences in the corpus.

These frequencies reveal that, although they may have been aware of other errors, non-native speakers actually demonstrated an online acknowledgment of only around one-fourth of their conversational lexical/grammatical errors.

Most striking from Figure 3.1 is that—of errors not corrected by the NNSs themselves—native speakers chose to let NNS errors pass uncorrected more than twice as often as they chose to recast them. There may be a host of intersecting reasons for this, among which the primary one is potentially cultural. Politeness and cooperative harmony are valued in Japanese culture (Lebra 1976; Kita & Ide 2007), as epitomized by the Japanese concept and ideal of *omoiyari*, roughly translatable as consideration, sympathy, and "the maintenance of smooth and pleasant human interactions" (White 1989: 67). The value placed on *omoiyari* perhaps makes some native Japanese speakers more hesitant than their interlocutors would be, if the roles were reversed, to interrupt or contradict the L2 learners (especially over something that relates to form over content, i.e., a grammatical error that does not impede communication). Frequent backchannels are an important component in polite and native-like interaction in Japanese, but these differ from true

interruptions; they are in fact seen as polite because they serve as 'continuers' (Schegloff 1982) and they demonstrate attentive listening (Mizutani 1982; White 1989) as well as emotional and interactional support (Mizutani 1984; Maynard 1986; Clancy et al. 1996; Hayashi 1996; Kita 1999; Kita and Ide 2007).

Furthermore, native speakers may also exhibit a type of speech accommodation or convergence (Beebe and Giles 1984; Coupland and Giles 1988; Giles et al. 1991) known as 'Foreigner Talk' (FT) (Ferguson 1971; Tarone 1983) toward non-native speakers, demonstrating their continued awareness that their interlocutors are not native speakers but L2 learners. Their accommodation may include an additional allowance for ungrammatical or nonsensical utterances as well as an allowance for NNSs holding the floor before the NJS jumps in with a new turn—in other words, an increased hesitancy to interrupt while the NNS has the floor and is taking time to formulate his or her thoughts. Giles and Smith (1979) have suggested that all speakers continually adjust their speech for the benefit of their conversational partners in order to make the interaction smoother and more comprehensible; this occurs cross-linguistically (see also Giles et al. 1991) and includes native speaker accommodation to non-native speakers, as exemplified by NJSs providing NNSs with synonyms or explanations (discussed in Section 3.2.3. below). In general, native Japanese speakers in conversations with non-native speakers may tend to provide empathetic support to the NNS through affirmative backchannels (e.g., Maynard 1986; Hayashi 1996), without wanting to disrupt the NNS stream of consciousness with grammatical corrections that derail the communicative content of the conversation (Hosoda 2006). Moreover, native speakers may be hesitant to draw attention to the NNS status of their interlocutor by contributing unsolicited feedback, which could include corrective

recasts, especially if the NNS has not previously asked explicitly to have L2 errors corrected (Hosoda 2006). This may be especially true in cases where the NNS may have lived in Japan or studied Japanese for many years already and where both speakers may consider the NNS's Japanese to be highly proficient or advanced; the exception to this tendency in my data was in the only conversation that took place between a married couple. Nevertheless, while the native speakers in the present study chose to let many errors pass uncorrected, grammatical errors in particular, it seems they were still quite willing to stop the NNS in the case of an unclear discourse referent or to jump in with a lexical item if the L2 learner indicated one may have been needed, as discussed in sections below.

Turning to those NNS errors that did result in either recasts or self-corrections, NNS self-corrections show L2 speakers' awareness both of their errors and of the correct structures or forms. Recasts by native speakers serve to direct the L2 speaker's awareness to the contrast between forms, thus serving as a source of implicit negative evidence (the contrast between the NNS utterance and the immediately following NJS utterance), as well as positive evidence (the correct form, in the same discourse context). Instances where the NJS does not provide a corrective recast of the NNS utterance, however, are sources of neither positive nor negative evidence, though they are arguably moments where the lack of negative evidence or corrective feedback might be a detriment to the NNS's language development.

In the rest of this section, examples and sub-types of each of three types of error sequence introduced in Figure 3.1 are discussed in turn: first, those cases where the NNS

self-corrects, then cases where the NJS recasts the NNS utterance, and finally cases where the NJS does not correct the NNS error.

3.2.1.1. *NNS self-corrects*

In this section, I will examine the 22 instances in which the NNS self-corrected. These cases were relatively evenly spread across all speakers and recordings in my data; self-corrections were observed in 9 of the 12 transcripts. Half of the 22 instances of non-native speakers correcting their own L2 Japanese errors involve the production or pronunciation of an intended lexical item (11 of 22), as in the following two examples. (In these and other examples in this chapter, L2 Japanese errors and their corrections/recasts are underlined, regardless of error type. The Recording number and the first Intonation Unit number of each excerpt is given in brackets prior to each example.)

(1) The two participants have been discussing the British historical icon, Guy Fawkes.
[Recording: 10-JE, IU 450]

1	→ NNS	*aku*	*mono*	*ka,*				
		bad	one	Q				
		'whether (you'd call him) a bad one,'						
2	NJS	*un,*						
		RT						
		'yeah,'						
3	→ NNS	*warumono*	*ka*	*to*	*iu*	*koto*	*de,*	
		bad.guy	Q	QUOT	say	NOM	CONJ	
		'(I) mean whether (you'd call him) a bad guy,'						

4 NJS *un* *un.*
RT RT
'uh-huh.'

(2) The two participants have been discussing how one can get to the island of Miyajima. [Recording: 25-JE, IU 1297]

1 → NNS *fuyu* *dake* *des-hou?*
winter only COP-IUFP
'it's only winter, right?'

2 NJS *hn?*
RT
'huh?'

3 → NNS *fuyu-* *a [a:]* *fune.*
winter ah boat.
'winter, oh, boats.'

4 NNS *sou* *gomennasai*
like.that sorry.
'right, sorry.'

5 NJS *a* *a* *a* *a.*
RT RT RT RT
'oh oh oh oh.'

6 NNS *fune* *dake.*
boat only
'only (by) boat.'

7 NJS *naruhodo* *ne.*
indeed IUFP
'that's right.'

In both of these examples, the NNS makes an error in line 1 and self-corrects it in line 3, although in example (2), the NNS is prompted to do so by the NJS's indication of non-comprehension (with rising intonation) in line 2. In both cases, the NJS then gives the NNS some positive feedback in the form of an affirmative backchannel immediately following the NNS's self-correction. These affirmative backchannels perhaps indicate some

combination of the NJS's approval of the correction, as the NJS passes on the opportunity to initiate further repair (Schegloff 1982), and the NJS's demonstration of attentive listening to what he or she perceives as an ongoing turn on the part of the NNS (Mizutani 1982; Maynard 1986; White 1989; Clancy et al. 1996). In fact, 7 of the 11 (64%) lexical self-corrections were met with an affirmative NJS response or reaction.

NJSs were not consistent, however, in their use of reactive tokens after NNS self-corrections. As seen in line 2 of Example (1) above, NJSs sometimes produce such affirmative-seeming reactive tokens even after NNS L2 errors, perhaps inadvertently providing positive feedback (or a lack of negative evidence) where negative feedback would have been more beneficial. From the NJS's perspective, these reactive tokens may simply be demonstrating attentive listening (e.g., Mizutani 1982); NNSs with enough experience in Japanese conversation may recognize this.

The other half of self-corrections (11 of 22) involved grammatical rather than lexical errors, including self-corrections of Japanese verbal or adjectival morphology, the selection of the correct tense or polarity of a verb, or the correct usage of Japanese grammatical (post-positional) particles; the following are two examples.

(3) The NJS had just asked the NNS where, if anywhere, she'd requested to live in Japan. [Recording: 16-JE, IU 1282]

1		NNS	*oo- s-*	*totemo*	*ookina*	*machi-,*
			oo- s-	very	big	town,
			'a very big town'			
2	→	NNS	*-ga,*			
			-NOM			

3 → NNS *a-* *-ni.*
uh -OBL
'uh in'

4 NNS *amari* *sumi-ta-kunai* *to* *itte-i-ta,*
not.very live-DES-NEG QUOT say-PROG-PST
'I told (them) I didn't really want to live (in a very big town).'

5 NJS *he [he::::].*
RT
'[shows interest or surprise].'

(4) The participants have been discussing travel in the NNS's home country of China. [Recording: 19-JC, IU 358]

1 → NNS *e* *ichiban* *too-i,*
uh number.one far-NPST
'uh the farthest,'

2 → NNS *too-ku* *it-ta* *tokoro-wa,*
far-CONJ go-PST place-TOP
'the farthest place I ever went,

3 NNS *sono* *Santoushou.*
that PN
'was Santoushou.'

4 NJS *un un un un un un*
RT RT RT RT RT RT
'uh-huh, uh-huh, uh-huh, uh-huh.'

Both Examples (3) and (4) illustrate NNSs self-correcting small grammatical errors; in each case the conversation continues with native speakers responding only to the content of the conversation but not to the self-correction itself.

In summary, of the 22 errors that NNSs self-corrected, half were lexical in nature and half grammatical. While the majority (7 of 11; 64%) of lexical self-corrections prompted an affirmative NJS backchannel or reactive token, the majority (8 of 11; 73%) of grammatical self-corrections yielded no NJS reaction; these NJSs may have been more

focused on the content of the conversation than on their interlocutors' production of perfectly native-like speech, as discussed further below.

3.2.1.2. *NJS recasts NNS error*

In this section, I turn to the 22 instances in which the NJS provides a corrective recast following a NNS error. These are instances of recasts or reformulations in which native speakers provide corrective feedback following learner L2 errors by providing a corrected version of the NNS's semantic intent in the original discourse-pragmatic context. The NJS error recasts convey no explicit negative feedback in themselves, but contain—in their contrast to the prior NNS utterance—a type of implicit negative evidence, as well as positive evidence in the form of the correct formulations.

NJS recasts were observed in only 5 of the 12 recordings. Interestingly, 17 of these 22 (77%) instances occurred in just two of the recordings: those of the two least experienced L2 speakers (Recordings 25 and 26); as a reminder from Chapter 2, the NNSs in Recordings 25 and 26 had been living in Japan for just one month each, by far the shortest amount of time compared to the other NNSs, who had been there between 3.5 and 26 years. In other words, NJS recasts of NNS errors tended to occur in conversations with less experienced NNSs.

Of the 22 instances of a native speaker recasting a NNS, 16 (73%) of the recasts were morphosyntactic (grammatical), involving morphology, post-positional particles, or counter classifiers, as in the following examples.

(5) Speakers are discussing being single on Christmas (a day couples spend together in Japan) [Recording: 26-JE, IU 261]

1		NNS	*chotto*	*sabishi-i* --	
			little	lonely-NPST	
			'it's a little lonely,'		
2	→	NNS	*sabishi-i*	*kanji-ru*	*ne.*
			lonely-NPST	feel-NPST	IUFP
			'it feels lonely (ADJ.), you know.'		
3	→	NJS	*samishi-ku*	*kanji-ru.*	
			lonely-CONJ	feel-NPST	
			'it feels lonely (ADV.).'		
4		NNS	*samishi-ku*	*kanji-* --	
			lonely-CONJ	feel-	
			'it feels lonely (ADV.).'		

(Note that in Example (5), *sabishii* 'lonely' and *samishii* 'lonely' are variants of the same word; the NNS error is only in using the non-past adjectival ending (*-i*) in place of the correct conjunctional morphology (*-ku*) to change the word into an adverb for use with a verb.)

(6) The non-native speaker is describing what he did on a trip to Okinawa.
[Recording: 24-JE, IU 515]

1	→	NNS	*kuru-*	*kuruma-wa*	*kari-ta*	*kara,*		
				car-TOP	rent-PST	because,		
			'(I) rented a car, so,'					
2	→	NJS	*un*	*rentakaa-o*	*kari-ta*	*no*	*da*	*ne.*
			RT	rental.car-ACC	rent-PST	IUFP	COP	IUFP
			'yeah, (you) rented a car, right.'					
3		NNS	*hai,*					
			yes					
			'yes,'					

4 NNS *hai hai hai hai.*
yes yes yes yes
'right right right right.'

5 NJS *e::*
RT
'yes.'

In Example (6), the native speaker recasts the NNS's utterance by changing the grammatical post-positional particle, from topic marker *wa* to accusative case-marker, *o* (as well as a lexical item, from *kuruma* 'car' to *rentakaa* 'rental car'). The NNS responds with what seems to be a backchannel in line 3, followed by a more overt recognition of the correction in line 4.

The remaining 6 of the 22 (27%) were not grammatical, but were instances of the NJS recasting the utterance to correct either the pronunciation or choice of a lexical item, as in the following example.

(7) The non-native speaker is talking about what he saw on his trip to Nara, Japan. [Recording: 25-JE, IU 414]

1 NNS *Nara-no,*
PN-GEN
'Nara's,'

2 NJS *un.*
RT
'yeah.'

3 NNS *daibutsu*.
large.Buddha.statue
'large Buddha statue.'

4 NJS *a:::,*
RT
'oh,'

5 → NNS *Todaiji*.
PN
'Toudaiji.'

6 → NJS *Toudaiji* *ne*.
PN IUFP
'Toudaiji right.'

7 NNS *mi-mashi-ta*.
see-POL-PST
'(I) saw (it).'

8 NJS *a- o- mochiron.*
of.course
'oh of course.'

In Example (7), the NJS corrects the NNS's pronunciation of *Toudaiji* (a proper noun place name), which the NNS mistakenly pronounced with a short rather than a long vowel in the first syllable.

Because these NNS errors occurred and were recast during the course of naturally-occurring dialogic interactions, it is also worth investigating the question of how non-native speakers respond, if at all, to having their L2 production corrected during these conversations. In a corpus-based study of classroom interactions, Ohta (2001: 135) defined 'corrective feedback' as any utterance (produced by either a teacher or learner—either the NJS or the NNS, in this case) that either initiates repair of an incorrect utterance or contrasts with a learner's incorrect utterance. Responses to these instances of corrective feedback were then classified as uptake, noticing, and no uptake (Ohta 2001). For the purposes of this study, following Ohta (2001), I classify NNS attempts at repeating NJS-provided correct formulations as 'uptake,' whether or not the NNS is successful in actually producing the correct form. I classify NJS recasts that did not result in any NNS reaction as

'no uptake.' I classify the remaining intermediate cases—in which the NNS responds minimally with a reactive token—as 'acknowledgement,' rather than assuming that these response tokens necessarily indicate 'noticing,' a conscious registration of some linguistic phenomenon (Schmidt 1995), which has been identified as a necessary precursor of learning (Inagaki & Long 1999) and can trigger processes of language acquisition (Schmidt 1994, R. Ellis 2005).

Examining the 22 instances of NJS recasts of NNS errors through this lens, a similar number of recasts fall into the uptake and no-uptake categories: 9 of 22 recasts (41%) resulted in NNS uptake and 8 (36%) resulted in no uptake. The remaining 5 (23%) recasts resulted in acknowledgement—involving no uptake, but perhaps involving noticing, as discussed above.

The following is one of the 9 cases that resulted in NNS uptake: the NNS attempts to repeat the corrected form after the NJS provides the positive evidence.

(8) The non-native speaker clarifies that he was talking about *Ioujima*, not *Miyajima*.
[Recording: 25-JE, IU 1322]

1		NNS	*a*	*Miya-* *Miyajima*	*janai,*
			RT	PN	COP.NEG
			'ah not Miyajima,'		
2		NJS	*e*?		
			RT		
			'[shows surprise]?'		
3		NJS	*doko*?		
			where		
			'where?'		
4	→	NNS	###	*Iwojima.*	
			(unintelligible)	PN	
			'[*unintelligible*] Ioujima.'		

5 → NJS *Ioujima?*
PN
'Ioujima?'

6 NNS *Iwojima,*
PN
'Ioujima,'

7 NNS *hai.*
yes
'yes.'

Example (8) was classified as an instance of NNS uptake despite the fact that the NNS is not actually successful at repeating the correct form: the NNS demonstrates his understanding that his pronunciation is being corrected, but nevertheless produces the same incorrect form again in line 6.[8]

In contrast, Example (7) above resulted in no NNS uptake: the NNS fails to (notice, acknowledge, or) repeat the corrected form, *Toudaiji* (pronounced with a long vowel), after the NJS produces a reformulation that provides positive evidence.

As mentioned above, the remaining 5 of 22 cases fell in between: the NNS produces some type of affirmative response token(s) perhaps indicating noticing; among other functions, reactive tokens can be used to demonstrate attentive listening to an interlocutor (Mizutani 1982; Maynard 1986; White 1989; Clancy et al. 1996). However, in these cases there is no NNS uptake to provide definitive evidence that the NNS has indeed registered the NJS recast. One such example was given in (6) above: after the NJS recast, *rentakaa-o karita* '(you) rented a car', in line 2, the NNS produces two intonation units *hai*

[8] The mainstream U.S. English pronunciation of the Japanese island's name as *Iwo Jima* is based on a mistake associated with the historical spelling of the island's name, spelled with a 'w' in an old form of Romanized Japanese transliteration; the official Japanese name for the island is *Iou Tou* 'sulfur island'—with a long 'o' vowel, but no 'w' approximant sound—though it is also called *Iou Jima* (as the words *tou* and *jima* both mean 'island').

'yes', and *hai hai hai hai*, indicating his possible noticing of the recast, although the interaction results in no NNS uptake of the recast form.

In summary, of the 22 recasts, or NNS errors for which NJSs provided corrective feedback, a majority (16; 73%) were grammatical in nature. Moreover, of these 22 recasts, only about a third (8; 36%) resulted in NNS uptake; the remaining recasts either resulted in no NNS uptake or NNS acknowledgement. However, Ohta notes that the absence of uptake—or an overt response—does not necessarily indicate a lack of learner attention (2001: 134). Moreover, it is not necessarily the case that uptake would have been conversationally appropriate in all such instances. Regardless of whether L2 learners demonstrate overt uptake of native speaker recasts, such corrective feedback has been theorized to facilitate acquisition of grammar, by allowing for a direct comparison between the two formulations of the same semantic content in the same discourse context.

To offer further perspective on NNS self-corrections and native speaker corrections or recasts, it is useful to consider the literature on a related topic from the field of conversation analysis (CA). A long history of the examination of 'repair' in conversations (mostly among native speakers of English) in conversational analytic literature has led to scholars identifying various structures and functions of conversational self- and other-initiated repair (e.g., Schegloff et al. 1977; Hayashi 1994; Fox et al. 1996; Mori 2004; Benjamin & Mazeland 2013). This literature focuses on the same type of interactional and sequential phenomenon as the 'recast,' but without the focus on language acquisition. Schegloff includes as repair any "overt efforts to deal with trouble-sources or repairables—marked off as distinct within the ongoing talk" (2007: 100-101). Instances of repair do not necessarily refer to speech that contains overt errors, as speakers sometimes undertake self-

repair when there was no hearable mistake or error; similarly, phenomena such as speaker 'word searches,' which are not contingent on any error, are included in the classification of repair structures (Schegloff et al. 1977: 363). The category of repair structures in CA is thus a broader one than that of recasts in the field of SLA.

In conversations among native speakers of a language—in much CA literature, English or other European languages—self-repair has been found to occur much more frequently than other-initiated repair (Schegloff et al. 1977, Schegloff 2007) as speakers closely monitor their own talk; when other-initiated repairs do occur, they may take the form of broad queries such as "huh?", or more category-specific ones, like "who?" (Schegloff 2007: 101), thus paving the way for the interlocutor to accomplish self-repair. Schegloff et al. (1977: 376) found that other-initiated repairs overwhelmingly resulted in self-corrections. Aside from this observed preference (in conversations among native speakers) for self-correction over other-correction, several other reasons why native Japanese speakers tended not to correct or recast many NNS grammatical and lexical errors are discussed in the section that follows. Hosoda (2000; 2006) has conducted studies on other-repair specifically related to conversations between native and non-native Japanese speakers, finding that native speakers rarely correct their NNS interlocutors unless one participant had invited the other's repair or unless the two participants encountered difficulties in achieving mutual understanding (Hosoda 2006). The results of the present study are consistent with those of Hosoda's (2006), in that a majority of NNS errors went uncorrected by NJSs, as discussed in the following section.[9]

[9] These results invite the question of whether native speakers of Japanese are unusual in this regard, compared to native speakers of other languages. Although a cross-linguistic comparison is beyond the scope of this study, it would be interesting if future research took up this question and further investigated this phenomenon.

3.2.1.3. *NJS does not correct NNS error*

In this third and final sub-section, I discuss the 56 instances in which the NJSs let NNS errors pass uncorrected. Of these 56 uncorrected errors, only 7 were cases of incorrect lexical items: five of these were cases of incorrect lexical verbs (two of these involving a simple animacy distinction), and two more were cases of incorrect lexical nouns, as in the following example.

(9) The non-native speaker is explaining that a friend's house would be ideal for a party. [Recording: 7-JE, IU 742]

1	→ NNS	*take: .. no bayashi*		*toka-wa*	*ura-ni*	*#ar-u* --
		bamboo GEN forest		etc.-TOP	back-OBL	exist-NPST
		'there are things like a bamboo forest in the back --'				
2	NJS	*a::::.*				
		RT				
		'ah.'				
3	NNS	*ura-ni*	*yama-ga*		*ar-u.*	
		back-OBL	mountain-NOM		exist-NPST	
		'there are mountains in the back.'				
4	NJS	*ano*	*mae*	*it-ta,*		
		DM	before	go-PST		
		'um (I) went before,'				

In Example (9), the non-native speaker produces the noun phrase *take-no bayashi* 'bamboo forest' rather than using the correct compound noun, *takebayashi* 'bamboo forest' or using the correct noun for forest*, hayashi* 'forest' (*bayashi*, while part of the compound word *takebayashi*, is not a word on its own). However the native speaker does not correct him or

provide a recast, but continues with the conversation. Such lexical errors only accounted for 7 of 56 (12.5%) uncorrected errors, however.

The remaining 49 uncorrected errors were all grammatical in nature, as in the following two examples.

(10) The native speaker is recounting some of her elementary school antics with friends. [Recording: 10-JE, IU 296]

1		NJS	*sono*	*toki,*		
			that	time		
			'at that time,'			
2		NJS	*gakkyuu*	*i'in*	*da-tta*	*kara,*
			class	representative	COP-PST	because,
			'because I was the class representative,'			
3		NJS	*watashi*	*okor-are-te,*		
			1	get.angry-PASS-CONJ		
			'I was gotten angry at,'			
4		NNS	*a*,			
			RT			
			'ah,'			
5	→	NNS	*sekinin*	*tor-are-ta*?		
			responsibility	take-PASS-PST		
			'was responsibility taken?'			

(vs. *tor-as-are-ta,* take-CAUS-PASS-PST: 'were you made to take responsibility?')

6		NJS	*@sou*.	
			right	
			'right.'	

(11) The non-native speaker is explaining standardized tests in the U.S., like the SAT. [Recording: 25-JE, IU 884]

1	→	NNS	*a*	*taka-kunai-no*	*%score-wa,*
			RT	high-NEG-GEN	score-TOP
			'uh a bad score is,'		

2 NJS *ikenai?*
no.good
'no good?'

3 NJS *hai.*
yes
'yes'

In Example (10) the non-native speaker omits a causative morpheme from the verb (line 5), which would have better conveyed her intended meaning. In example (11) the non-native speaker appends the genitive *-no* to an *i*-adjective (line 1), where nothing is required at all; in fact its use there is incorrect. In both of these cases, the native speaker chooses to allow the communicative content of the conversation to continue uninterrupted, rather than drawing attention to the NNS Japanese error.

In summary, of the 56 uncorrected NNS errors, a significant majority (49; 87.5%) were grammatical; the remaining 7 uncorrected errors involved the use of an incorrect lexical item.

As mentioned above, there are many reasons why native speakers would let learner L2 errors go uncorrected, some of which are potentially cultural, as *omoiyari*, the maintenance of smooth interactions, is valued in Japanese culture. Non-corrections of L2 errors may also be characteristic of native speakers' use of accommodation/foreigner talk (Ferguson 1971; Tarone 1983), including an increased willingness to focus on the content, rather than strictly on the form, of their interlocutors' utterances. Additionally, conversation analytic research (of conversations among native speakers, mainly of English) has found that other-initiated repair sequences can (but do not necessarily) signal disagreement or rejection (Schegloff 2007: 105); native speakers may be hesitant to convey such signals to their NNS interlocutors. Indeed, Hosoda (2006: 44) has found that

native Japanese speakers do not "orient to less-than-perfect language use during much of their interaction," choosing not to treat their NNS interlocutors' L2 errors as sources of interactional trouble, as long as they were able to achieve mutual understanding, a result supported by the present data as well. An account of these uncorrected errors is offered in the summary that follows.

Summary

Among the lexical versus grammatical types of errors discussed above, I have categorized sub-types based on the three types of NNS error sequences (NNS self-corrects; NJS recasts; NJS does not correct). The results are given in Figure 3.2.

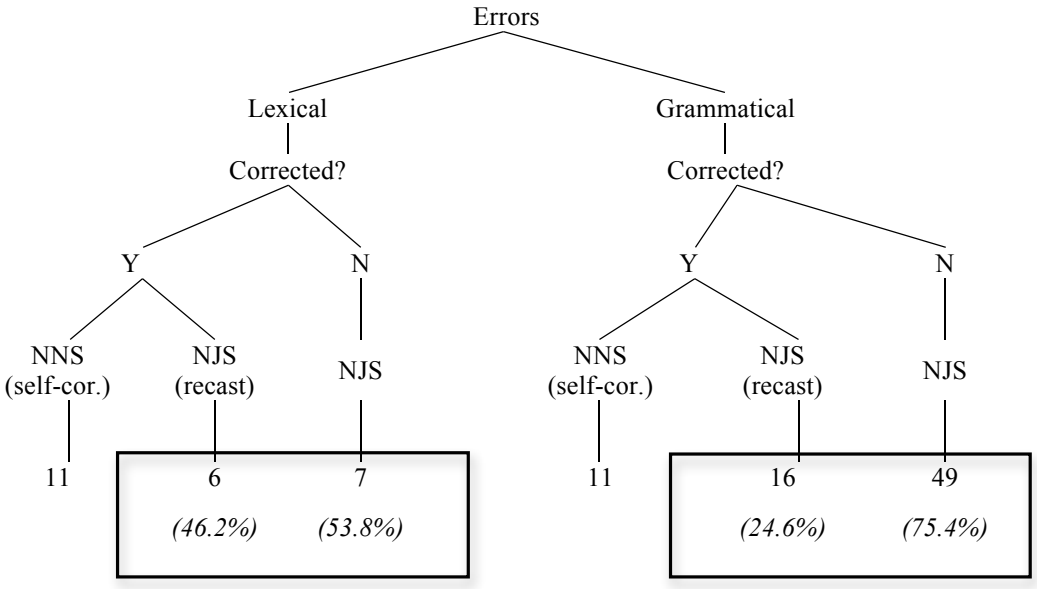

Figure 3.2. Frequencies of conversational sequences based on types of error.

While it was clear that native speakers let many NNS L2 errors pass uncorrected, thus failing to provide the NNSs with negative evidence regarding the ungrammaticality of

their utterance(s), it is also interesting to observe which types of errors were ignored in this way. Although within the framework of usage-based theories of grammar there is no representational distinction between grammar and lexicon, I nevertheless roughly categorized the NNS errors into those that were more grammatical in nature versus those that were more lexical in nature. The non-native speakers self-corrected 22 errors, half of which were lexical while half were grammatical. In contrast, native speakers provided recasts for about half of the remaining NNS lexical errors (6; *46.2%*), but only for about a fourth (16; *24.6%*) of the remaining NNS grammatical errors. (Thus, a majority of the uncorrected errors were grammatical rather than lexical: 49 out of 56, or *87.5%*, although this was not a significant result according to a Fisher-Yates exact test for contingency; p=0.17.)

The uncorrected errors as a group may have demonstrated this kind of skewing toward grammatical, rather than lexical, types for several reasons. Firstly, it is possible that concrete grammatical errors would be more salient and noticeable than lexical errors during outside analysis (i.e., by myself and my native Japanese research assistant), since without personally knowing the subjects participating in the recordings—or more of the non-linguistic context related to their lives—we cannot be sure if each lexical item produced by a NNS is actually that which he or she intended it to be. However, even such considerations could not account for very many missed observations of lexical errors, as the native speaker interlocutors would have had the chance to respond or interject had the non-native speakers actually used an inappropriate lexical item. Indeed, it seems that in general, an incorrect-sounding lexical item is more likely to be recast by a NJS interlocutor, whereas a grammatical error that does not get in the way of the

communicative goals of the conversation—of conveying a certain meaning with a certain stance—is more likely to go uncorrected. In other words, using a completely incorrect or nonsensical noun phrase (as in Example (3) above) seems to impede communication more than using slightly incorrect morphosyntax, especially if the semantic gist is still evident.

Not given in Figure 3.2 is the distribution of tokens among individual NNSs. As mentioned above, whereas the NNS self-corrections were distributed across all 12 recordings, the NJS recasts of NNS errors occurred in only 5 of the 12 recordings; 17 of these 22 (77%) NJS recasts took place in the two recordings of the least experienced L2 speakers (Recordings 25 and 26). While this seems to reveal a stronger tendency for native speakers to recast NNS errors when in conversation with less experienced non-native speakers, it is also true that less experienced NNSs make more errors in total. For example, 19 of the 56 (34%) errors not corrected by NJSs in this data (and 45 out of 100 errors overall; 45%) occurred in those two particular recordings, 25 and 26.

Now that we have explored the various types of dialogic sequences following non-native speaker L2 errors, the next section similarly explores the types of sequences that occur following NNS-initiated points where the learner's status as a NNS becomes relevant; these are not grammatical or lexical errors, yet are still instances in which the NNS speaks non-natively.

3.2.2. Learner's NNS Status becomes Relevant (NNS-initiated)

The points discussed in this section are not L2 errors, but rather NNS inquiries about correct or ideal native-like L2 usage, or points at which the learner repeats new or

challenging material after the native speaker. These instances constitute a heterogeneous category made up of three broad types: 1) the NNS is uncertain of the correct lexical item to use; 2) the NNS asks about the meaning of a lexical item uttered by the NJS; and 3) the NNS repeats part or all of a NJS utterance, seemingly to aid in processing of new or unfamiliar L2 material provided by the NJS.

These sequences do not occur in mutually exclusive types of discourse contexts (in contrast to the data points given in the previous tables; i.e., the sequences discussed in this section could occur either separately or in combination), nor do they carry out the same functions as each other; they are similar only in that the learner's NNS status is made relevant. Since a specific sequence was sometimes an example of more than one of these categories, the relative frequency of category types cannot be determined precisely. Nevertheless, an overview of the frequencies of these instances is given, to provide some sense of their individual frequencies in the data, in Figure 3.3.

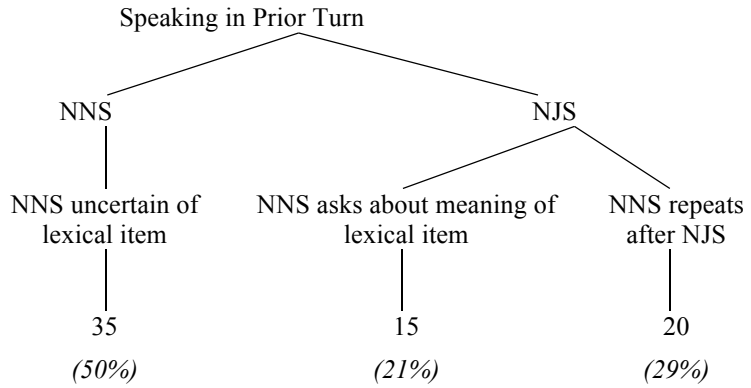

Figure 3.3. Points at which the L2 learner makes his or her NNS status relevant.

Whereas classroom lessons tend to focus on a limited (high-frequency) set of vocabulary items, lower-frequency lexical items, with which a NNS may be less familiar,

seem more likely to come up in focused conversation relating to topics of interest to the participants. In the naturally-occurring conversations that constitute the data for this study, the NNSs played a role in directing and shaping the conversations, along with their NJS interlocutors, and thus contributed to the choice of topics of conversation that were discussed; often these were topics in which the NNS had some interest and therefore had already acquired some of the specific vocabulary necessary for discussion, though at other times, as seen below, the NNSs chose to inquire about L2 equivalents for specific low-frequency lexical items that they did not know. While not specifically examined here, lower-frequency grammatical constructions may present different challenges to NNSs: it may be the case that low-frequency constructions result in more NNS errors than high-frequency ones, and/or that more errors of this type are left uncorrected since the native speaker (consciously or not) judges them to be lower frequency, and therefore perhaps less essential to correct.

This section explores moments of learners' awareness of their limited L2 ability, even when no L2 errors or NJS recasts have occurred. Particularly of interest are types of exchanges that seem to facilitate learning, such as the learner strategy of repeating unfamiliar forms. In the following three sub-sections, examples of each of the types in Figure 3.3 will be presented and discussed in turn: first those cases where the NNS is uncertain of the correct lexical item; then cases where the NNS asks about the meaning of a lexical item; and finally cases where the NNS repeats unfamiliar material after the NJS.

3.2.2.1. *NNS uncertain of correct lexical item*

When the non-native speaker is uncertain of the correct/ideal lexical item to express his or her intended meaning, the most frequently used strategy seems to be to produce a guess at a lexical item with rising intonation. Indeed, this occurred 18 of 35 (51%) times in the data, as in the following example.

(12) The speakers are trying to remember Hess's Law from their chemistry class.
[Recording: 11-JE, IU 133]

1 → NNS *onaji yakubutsu [yaku..butsu]?*
same drugs
'the same drugs?'

2 NJS *un ya- --*
RT
'yeah *ya- --*'

3 NNS *onaji --*
same
'the same --'

4 NJS *un nanka,*
RT like
'yeah like,'

5 NNS *un.*
RT
'yeah.'

6 NJS *kongoubutsu tsuku-ru tame-no.*
mixture make-NPST benefit-GEN
'in order to make a (chemical) mixture/amalgam.'

7 NJS *sou kongoubutsu --*
right mixture
'right, a (chemical) mixture/amalgam --'

In Example (12), the non-native speaker produces the word *yakubutsu*? 'drugs, medicine' with a micropause in the middle of the word and with rising intonation (line 1). The native speaker begins to respond affirmatively but ends up choosing another word in line 6, as she attempts to remember Hess's Law: *kongoubutsu* 'mixture, amalgam', which the NNS then accepts as more accurate and repeats in line 7.

The NNS's initial use of the noun phrase *onaji yakubutsu?* with rising intonation is not actually a question but instead resembles a 'try marker' (Sacks & Schegloff 1979; Clark and Wilkes-Gibbs 1986), as it shows both the NNS's uncertainty with her choice of noun phrase as well as her intent to continue speaking after pausing to receive confirmation from her interlocutor. (Though try markers are typically employed to seek confirmation that the recipient has been able to identify a specific referent, in this case a try marker is used to seek confirmation that the speaker is using an appropriate lexical item.) However, she does not receive this confirmation on her choice of noun phrase from the NJS, so the speakers must then settle on a better noun phrase together before the conversation can continue.

A similar strategy used by the NNSs was to code-switch and produce the word in their own L1, often with rising intonation as well. This occurred 13 of 35 (37%) times, sometimes overlapping with the first strategy, as in the following example.

(13) The NJS has just told the NNS that she wants to be a Home Economics teacher.
[Recording: 25-JE, IU 271]

1	→ NNS	*nihongo-de*	*wakar-anai*	*%chef*	*demo,*
		Japanese-OBL	understand-NEG		but
		'I don't know the word *chef* in Japanese but,'			

2 → NNS *ryouri-no* *sensei?*
cooking-GEN teacher
'cooking teacher?'

3 NJS *a::.*
RT
'ah.'

4 NJS *ryourinin?*
cook
'a cook?'

5 NNS *ja-* *hai.*
yes
'yes.'

6 NJS *wa* *shefu* *to* *i-u.*
TOP chef QUOT say-NPST
'is called a *shefu* ('chef').'

7 NNS *shefu,*
chef
'chef,'

In Example (13) the non-native speaker uses two strategies: he first code-switches for the missing word, *%chef*, then also guesses at the intended lexical item, producing a try marker with rising intonation: *ryouri-no sensei*? 'cooking teacher'. After the NJS provides a better word, *shefu* 'chef', the NNS repeats this and continues the conversation.

Less frequent (4 of 35; 11%) was a more direct strategy of explicitly asking *nan tte iu*? 'how do you say…'. Additionally, in 7 (of 35; 20%) cases, learners code-switched and produced an L1 lexical item, either explicitly asking for its Japanese equivalent or stating that they forgot or did not know the word in Japanese (the latter also occurs in (13) above). The following is an example of a more direct inquiry type.

(14) The non-native-speaker has just served the native speaker coffee in her apartment. [Recording: 16-JE, IU 195]

1	→	NNS	*kore-wa*	*nan*	*to*	*iu?*
			this-TOP	what	QUOT	say-NPST
			'what's this called?'			
2		NNS	*koohii,*			
			coffee			
			'(this) coffee,'			
3		NJS	*huun?*			
			DM			
			'huh?'			
4		NNS	*dorippu*	*koohii,*		
			drip	coffee		
			'drip coffee,'			
5		NJS	*dorippu*	*bag- --*		
			drip	bag-		
			'drip bag- --'			
6		NJS	*dorippu*	*pakku*	*tte*	*kai-te-a-ru.*
			drip	pack	QUOT	write-CONJ-exist-NPST
			'*drip pack* is written (on it).'			
7		NNS	@@@			
8		NNS	a	*dorippu*	*pakku*	*ka,*
			RT	drip	pack	Q
			'oh (so it's) *drip pack* huh.'			

Such explicit instances—either directly asking 'how do you say…' or explicitly mentioning a forgotten or unknown Japanese word—occurred a total of 11 of 35 (31%) times; and in some cases these strategies were produced in combination with each other.

All but two instances (33 of 35, 94%) of the NNSs indicating their uncertainty about lexical items elicited helpful responses from the NJSs, either an affirmative backchannel

indicating that the NNS had guessed the correct lexical item, or a suggestion or two for the intended lexical item.

Furthermore, nearly all of the instances (29 of 33, 88%), in which the NJS offered a substitute or candidate word for the NNS query resulted in NNS uptake: the NNS either picked up the word to use in conversation; repeated the word after the NJS as if to help with processing (as discussed below); or responded with an affirmative backchannel. These types of behaviors all evidence learning, or at the very least its precursor, noticing. Alternatively, the NNS could proceed with the conversation using a form of co-construction, where the NJS lexical item serves as the beginning of a co-constructed utterance that the NNS continues (without needing to repeat the new or unfamiliar lexical item), as in the following example.

(15) The two participants have been discussing the British historical icon, Guy Fawkes. [Recording: 10-JE, IU 388]

1		NNS	*Gai*	*Fookusu-ga,*
			PN	PN-NOM
			'Guy Fawkes,'	
2		NNS	*hi- --,*	
3	→	NNS	*hiaburi?*	
			burning.to.death	
			'burning to death?'	
4		NJS	*un.*	
			RT	
			'yeah.'	
5	→	NJS	*a:*	*hiaburi-no* *kei.*
			RT	burning.to.death-GEN punishment
			'ah, punishment by burning to death.'	

6 → NNS *sare-ta* *no [saretan]* *desu* *yo*
do.PASS-PST IUFP COP IUFP
'(he) was (punished by burning to death).'

7 NJS *hontou.*
RT
'really.'

In Example (15), the NNS uses the word *hiaburi* 'burning to death' with the rising intonation typical of a try marker in line 3; the NJS then responds with an affirmative reactive token, as well as providing a suggestion for a fuller and more descriptive noun phrase, *hiaburi no kei* 'sentencing to/punishment by burning to death' in line 5. Rather than repeat this NJS-provided noun phrase, the NNS simply appends a passive light verb to it, *sare-ta* 'was done' (line 6), thus co-constructing the end of the clause (which she began in the first IU of this extract). Szatrowski (1993) has shown that this type of co-construction of what she terms *wadan* or 'information units' is not uncommon in Japanese among native speakers.

In several cases, however, the NNS did not indicate agreement with the lexical item provided by the NJS, though in these cases it seems that speakers were more interested to move on with the communicative goals of their conversation rather than get caught up with finding the correct word, as the next example illustrates.

(16) The speakers are reminiscing about their 10th grade art classes and art teacher.
[Recording: 11-JE, IU 412]

1 NNS *%paper* *%mâché,*
'papier-mâché,'

2 NNS *%pap-*

3 NJS *a,*
RT
'ah,'

4 NJS *@eto [et:::to],*
DM
'@um,'

5 → NNS *nan tte iu no nihongo-de,*
what QUOT say IUFP Japanese-OBL
'what is that called in Japanese,'

6 → NNS *peepaa mashe?*

7 NJS *kami [kami::],*
paper
'paper,'

8 NJS *nan darou.*
what COP.IUFP
'what is it I wonder.'

9 NNS *kami nendo janai kedo,*
paper clay COP.NEG but
'it's not *kami nendo* but,'

10 NJS *@kami @nendo chiga-u kedo.*
paper clay be.different-NPST but
'it's not *@kami @nendo*.'

11 NJS *jisho mot-te-i-ru kedo @shirabe-ru*?
dictionary hold-CONJ-PROG-NPST but look.up-NPST
'I have a dictionary, should I @look it up?'

12 →NNS *maa i- maa ii ya.*
well well good COP
'whatever, it's fine.'

13 NJS *maa ii ya.*
well good COP
'it's fine.'

14 NNS @@

15 NJS @@

16 NNS *sore* *de,*
that COP.CONJ
'and then (so anyway),'

In (16), the NNS explicitly states that she doesn't know the Japanese word for *papier-mâché* (line 5); she then produces a guess at the correct word (using Japanese pronunciation), *peepaa mashe?*, with the rising intonation typical of try markers (line 6). The NJS tries to make suggestions for the correct word—possibly one beginning with *kami* 'paper'—but the NNS asserts that the term is not *kami nendo* 'paper clay' and the NJS agrees. When the NJS offers to look it up in a dictionary, both speakers seem to care more about continuing with the content of the conversation (lines 12 and 13) rather than allowing it to be derailed over searching for a word (the referent of which has already become clear to both participants).

In summary, of the 35 cases in which a non-native speaker inquired about a lexical item, 18 (*51%*) were accomplished using rising intonation on a specific lexical item. Another 13 (some overlapping with the first 18; *37%*) included the NNS strategy of producing a code-switched word with rising intonation. Of the 35 inquiries, 11 (*31%*) featured more direct strategies, such as the NNS explicitly stating that he or she had forgotten a word in Japanese, or (in four cases) directly asking *nan tte iu* 'how do you say…'; these 11 instances of direct inquiries sometimes overlapped with some of the other, less direct strategies. Nearly all NNS inquiries about a lexical item resulted in a helpful

response from the NJS; and nearly all NJS-provided suggestions resulted in NNS acknowledgement and/or uptake.

3.2.2.2. *NNS asks about the meaning of a lexical item*

Sequences in which a NNS inquired about the meaning of a lexical item in an NJS utterance were surprisingly infrequent. Occurring only 15 times in the corpus, 9 of these instances took place in the conversations of the two least experienced speakers (Recordings 25 and 26).

In most of these interactions (12 of 15 times; 80%) the NNS simply repeated a word or phrase from the NJS utterance, often using rising intonation, as in the following example.

(17) The non-native speaker has just asked for sight-seeing recommendations in Japan. [Recording: 25-JE, IU 1262]

1		NJS	*o-susume-no*		*tokoro?*	
			HON-recommendation-GEN		place	
			'places (I'd) recommend?'			
2		NJS	*yappari*	*watashi-no*	*jimoto*	*@kana.*
			after.all	1-GEN	hometown	IUFP
			'(I guess I'd have to say) my hometown.'			
3		NNS	*hm:,*			
4		NJS	*jimoto.*			
			hometown			
			'hometown.'			
5	→	NNS	*jimoto?*			
6		NJS	*tte*	*iu*	*no-wa,*	
			QUOT	say	NOM-TOP	
			'that is to say,'			

7	NJS	*watashi*	*Kobe.*
		1	PN
		'mine (is) Kobe.'	
8	NNS	*a*	*Kobe.*
		RT	PN
		'ah Kobe.'	

In Example (17), the NJS, perhaps having sensed that the NNS had trouble understanding her utterance in line 2, repeats the word *jimoto* 'hometown' in line 4. The NNS then repeats *jimoto* with rising intonation (line 5), perhaps indicating he doesn't understand the meaning; however, rather than defining or explaining the meaning of *jimoto*, the native speaker names her hometown, Kobe, as an example (line 7). The non-native speaker then demonstrates uptake of *Kobe* (line 8), indicating at the very least that he may be familiar with the city of Kobe, or that he understands it to be a recommended travel destination, despite producing no evidence as to whether or not he has understood the meaning of *jimoto*, or the fact that Kobe is his interlocutor's hometown.

Such repetitions by NNSs of unfamiliar lexical items also occurred without rising intonation, as in (18).

(18) The native speaker has just explained how Christmas is celebrated in Japan. [Recording: 26-JE, IU 170]

1	NJS	*maa*	*o-shougatsu-wa?*
		well	HON-new.years-TOP
		'well as for New Year's?'	
2	NJS	*ano,*	
		DM	
		'um,'	

3 NJS *nan darou,*
what COP.IUFP
'what (can I say…),'

4 NJS *o-shougatsu wakar-u.*
HON-new.years understand.NPST
'(you) understand *o-shougatsu*.'

5 → NNS *shougat- [shou::gat-] --*

6 NJS *shougatsu,*
new.years
'New Year's,'

7 → NNS *shou- shou:gatsu,*

8 NJS *o-shougatsu %is %new %year.*
HON-new.years
'*o-shougatsu* is New Year's.'

9 NNS *o hai hai hai,*
DM yes yes yes
'oh yes yes yes.'

10 NNS *o-shougatsu hai.*
HON-new.years yes
'*o-shougatsu* yes.'

In Example (18), the non-native speaker repeats the word *shougatsu* 'new year's' after the native speaker, but without rising intonation (lines 5 and 7); since the NNS's pronunciation of *shougatsu* is disfluent, the NJS realizes that the NNS does not understand the noun phrase, and translates into the NNS's native English in line 8.

The remaining 3 (of 15; *20%*) inquiries about the meaning of a lexical item involved explicit questions, and, interestingly, came from two of the more experienced speakers (Recordings 2 and 8), as in the following example.

(19) The speakers are talking about which Japanese gifts to buy for Korean friends. [Recording: 2-JK, IU 718]

1		NJS	*hiepita*	*to*	*yorokob-are-tara*	*igai-to.*
			hiepita	QUOT	be.pleased-PASS-COND	unexpected-OBL
			'what if (they) were unexpectedly pleased with *hiepita*.'			
			[*hiepita* are cooling sticker sheets that help reduce fevers]			
2	→	NNS	*hiepita*	*tte*	*nani?*	
			hiepita	QUOT	what	
			'what's *hiepita*?'			
3		NJS	*hiepita*	*tte*	*yut-tara,*	
			hiepita	QUOT	say-COND	
			'*hiepita* is,'			
4		NJS	*kore.*			
			this			
			'this.'			
5		NJS	*ano,*			
			DM			
			'um,'			
6		NJS	*netsu*	*sama*	*shiito*	*mitaina*	*yatsu*	*ya,*
			fever	cool	sheet	seeming	thing	COP
			'it's a thing like a sheet that cools fevers,'					
7		NJS	*are*	*Kankoku*	*nai*	*no [nain]*	*ne*	*yarou.*
			those	Korea	exist.NEG	IUFP	IUFP	COP.IUFP
			'those probably don't exist in Korea right.'					
8		NNS	*ha.*					
			RT					
			'huh.'					

In (19) the non-native speaker directly asks *hiepita tte nani* 'what's *hiepita*?' in line 2; the native speaker then explains (without using code-switching).

In summary, the non-native speakers usually inquired about the meaning of lexical items simply by repeating the words after the native speaker, often with rising intonation.

Of the inquiries about lexical item meaning in the corpus, 9 of 15 (60%) occurred in the recordings of the two least experienced speakers (Recordings 25 and 26). The native speaker response to such inquiries was usually to provide either a Japanese synonym more likely to be understood by the NNS, or a description or definition of the term in Japanese (as in 19 above), though occasionally they responded by code-switching in order to provide the non-native speaker's L1 equivalent (as in 18 above). In all of these instances, the NNSs were able to either articulate or implicitly indicate their need for further explanation or definition of part of the L2 input they encountered in their conversations with native speakers. On their part, the native speakers demonstrated a sensitivity to this need of the NNSs and responded helpfully.

This type of immediate, contextualized, individual learner-tailored response, though common in one-on-one conversational interactions, would be rarer in an L2 classroom setting. Language courses with the goal of giving L2 learners speaking skills and conversation practice must prioritize student speaking time; they often do this through an increased focus on student-centered, rather than teacher-centered, activities that encourage the greatest number of students to practice speaking the language at once, such as in group- and pair-work exercises. Language instructors certainly hold the floor for their share of the class time, when introducing new grammatical structures for example; during this time, individual students may not feel that they can interrupt the flow of the teacher's talk, directed to the entire class at once, to double-check their own understanding of each and every unfamiliar word. Moreover, though instructors may call on individual students in turn to produce a short response or two in front of the whole class, those students are likely not engaging in an extended dialogic interaction with the teacher. The primary locus

of "natural" conversation practice for students in L2 classrooms is thus in the group- or pair-work setting, in which students are ideally grouped with peers at their own L2 level. While such conversation practice is undoubtedly beneficial for increased L2 fluency, it is unlikely that another language learner at the same level would know significantly more vocabulary words in order to help a pair-work partner with every potential lexical item inquiry (although it is possible that paired-up students may be at different levels and the more proficient student could help the less proficient one); moreover, fellow L2 students may be more focused on their own practice with and internalization of the target language than on correcting or assisting their peers.

3.2.2.3. *NNS repeats after the positive evidence provided by the NJS*

Non-native speakers also make their NNS status relevant by repeating part or all of a NJS utterance, seemingly to aid in processing or memorization of new or unfamiliar L2 material; this occurred 20 times in the corpus.

Repetition is a noticeably frequent and preferred interactional strategy in Japanese conversation (Hayashi 1996); Japanese speakers use repetition for various functions including emphasis, evaluation, foregrounding, and clarification (e.g., Nakada 1991; Kumagai 2004; Szatrowski 2010). Speakers also use both repetition and backchannels for maintaining an empathetic connection with their interlocutors, and for helping the speaker maintain the floor (Hayashi 1996). Repetition of a prior turn—either partially or in its entirety—is also used by Japanese speakers to demonstrate alignment and agreement, whether or not the repetition follows an agreement token (Mori 1999), though such

repetition can also be used, conversely, for initiating a repair or correction of a prior turn, depending on the speaker's timing, tone of voice, intonation, and non-verbal behaviors (Mori 1999: 210).

The type of NNS repetition discussed in this section differs from such interactional uses of repetition among Japanese native speakers, however. Ohta distinguishes language learners' imitation of L2 input from ordinary repetition by its lack of a social function (2001: 17). Ohta observes that both Japanese learner repetitions and 'private speech' (self-directed L2 learner speech) can reflect cognitive processing and play a role in learners' hypothesis testing about correct L2 formulations (2001: 46). Repetition is the most common type of private speech found in Ohta's classroom data (2001: 54), although Ohta only includes 'covert repetition,' or what classroom learners repeat to themselves in a soft voice or whisper. One-on-one interactions with native speakers, as in the present study, make learners the sole focus of attention—unlike in classrooms where students must share the floor with classmates. Such interactions give learners more opportunities to externalize some aspects of their learning process, such as by engaging in private speech-type imitations that are less covert or not whispered.

The most frequent type of learner repetition in a classroom setting does not serve a communicative or interactional function; the learner simply repeats words and expressions uttered by the teacher (Ohta 2001: 56). Ohta observes that L2 students have a tendency to repeat new material or material that is "not yet well learned or acquired," and that repetition often occurs when the learners experience difficulty in forming the new words (2001: 58), for example, for words with tricky or irregular conjugations. A learner's successful repetition of a new and unfamiliar word can thus be seen as first evidence of the

learner's progress with that form. Ohta's (2001) Japanese language classroom-based data suggest that learners repeat what they are working to acquire: while engaging in private speech, learners repeat not only words but parts of words. This repetition "has an assimilative function" for beginning second language learners working to incorporate new language data into their developing L2 system (Ohta 2001: 70). Ohta deems repetition a resource that "builds into language manipulation" (another type of private speech) (2001:61), asserting that "private speech is not only a frequent feature of L2 classroom activity, but evidences SLA in process" (2001: 65).

The instances discussed in this section consist of NNS repetitions of NJS utterances that were not initiated by NJS feedback following either a NNS error or NNS inquiry. Instead, these repetitions took place after other NJS utterances that were simply part of the conversation (without the learner's NNS status being relevant prior to the repetition). The following is an example of a learner repetition, which serves no distinct communicative function, and is thus reminiscent of Ohta's (2001) category of private speech.

(20) The non-native speaker asked the native speaker what she wants to do for a living.
[Recording: 25-JE, IU 258]

1	NNS	*ano*	*sotsugyou-no*	*so-* *a-*	*ato-de.*
		DM	graduation-GEN		after-OBL
		'um after graduation.'			
2	NJS	*un,*			
		RT			
		'yeah,'			
3	NNS	*ano,*			
		DM			
		'um,'			

4 NNS *ryouri .. ga* *tsukuri-tai.*
cooking-NOM make-DES
'(you) want to make food.'

5 NJS *un.*
RT
'yeah.'

6 NJS *uun* *ryouri-wa* *tsukuri-tai* *to* *iu* *ka:::,*
no cooking-TOP make-DES QUOT say Q
'no rather than saying (I) want to make food,'

7 NJS *oshie-tai.*
teach-DES
'(I) want to teach (cooking).'

8 → NNS *oshie-tai.*
teach-DES
'want to teach (cooking).'

9 NNS *%so* *%you* *%te-*[10] --

10 NJS *sou.*
RT
'right.'

In Example (20), the native speaker has just uttered the clause *oshietai* '(I) want to teach (cooking)', consisting of the verb *oshieru* 'to teach' and the desiderative morpheme *-tai* 'want to VERB'. Conversational Japanese features many types of evidential considerations and expressions; expressing one's own desire to do an activity conveyed by a specific verb is accomplished with the morpheme *-tai*, but given that it is impossible to truly know someone else's desires, others' analogous desires are typically expressed with a different evidential morpheme, *-tagaru* 'seems to want to VERB', which itself conjugates as a verb. By repeating the NJS clause *oshietai* '(I) want to teach' in line 8, the NNS is producing a

[10] In line 9, the NNS is ostensibly starting to say '*so you teach*…' in his native language, English.

pragmatically nonsensical utterance; in effect, he is repeating the phrase "*I* want to teach" rather than responding with an acknowledgement or comment about his interlocutor's desire to teach. The NJS, in turn, seems to treat this NNS utterance as 'private speech', by not correcting or recasting his use of the *-tai* rather than the *-tagaru* morpheme to refer to her desire. Such examples suggest that non-native speakers—particularly less experienced ones—may produce these types of repetitions in order to internalize new or challenging material that has not yet been fully acquired, rather than with communicative intent. (Not all cases of NNS repetitions of NJS demonstrated this quite as clearly.)

The following example contrasts the use of a native speaker's repetition for demonstrating alignment and agreement with the NNS's use of non-communicative repetition of an unfamiliar and challenging form.

(21) The native speaker has just told the non-native speaker that the deadline for his thesis is at 11:59pm on a Friday night.
[Recording: 26-JE, IU 827]

1		NNS	*kibishii*	*@yo.*
			strict	IUFP
			'(that's) strict.'	
2	→	NJS	*kibishii*	*kibishii.*
			strict	strict
			'it really is strict.'	
3		NNS	@@@@@	
			[laughter]	
4		NJS	*dakara*	*asob-e-naku-te*,
			therefore	play-POT-NEG-CONJ
			'so that's why I can't have fun [until after the deadline],'	
5	→	NNS	*asob-e-naku-te*,	
			play-POT-NEG-CONJ	
			'can't have fun,'	

6 NJS *un*.
RT
'yeah.'

In Example (21), the NJS repeats *kibishii* 'strict' after the NNS in line 2, demonstrating his agreement with the NNS's utterance. Repeating predicate adjective assessments, sometimes more than once (as in line 2) and sometimes with the cooperative agreement (Cook 1992) or shared assessment particle *ne*, is a common way to express or confirm agreement in Japanese. (An interesting note here is that it would have been more natural for the NNS to end his utterance in line 1 with *ne* 'isn't it?' rather than *yo*, an assertion IUFP, since the native speaker is already familiar with his own deadline and how strict it feels.) In contrast, the NNS's repetition of *asobenakute* 'can't play' does not serve to express or confirm agreement or alignment. Coming from the NNS, rather than the NJS who produced it in talking about himself, the phrase *asobenakute* lacks a communicative function and instead seems to indicate that this word might present a cognitive processing challenge to the NNS, who therefore repeats it.

In summary, the non-native speakers in my data occasionally repeat all or part of a NJS utterance although this repetition does not seem to serve a communicative function. Such instances provide evidence of the non-native speakers' noticing of the structures and forms used by the native speakers, in addition to the content of their utterances. We can hypothesize that the NNSs produce these repetitions in order to aid in their own processing of the formulations (or perhaps at times to rephrase their own words based on a NJS formulation before continuing to speak), thus demonstrating their language acquisition in process, as they use private speech-type repetitions to internalize unfamiliar forms.

In general, the native speakers seem to take these NNS repetitions in stride and do not actually call attention to them, although the non-native-speaker status of the L2 learners may be quite salient in such moments. Not surprisingly, of the 20 such cases, 13 (65%) occurred in the conversations of the two least experienced non-native speakers, Recordings 25 and 26 (9 of those—45% of the 20—occurred in Recording 25), indicating that this may be a strategy that tends to be employed more often by less experienced NNS in conversations with native speakers.

This and the previous section have explored NNS-initiated dialogic sequences; the following section examines sequences initiated by native speakers related to the learners' NNS status.

3.2.3. Learner's NNS Status becomes Relevant (NJS-initiated)

In some cases it is the native speaker, rather than the L2 learner, who makes the interlocutor's status as a non-native speaker relevant. These instances are not triggered by L2 errors or inquiries, but rather are points at which the NJSs demonstrate consideration for the NNS status of their interlocutors, either by code-switching or offering synonyms, or by suggesting a lexical item without having been asked. Points at which the NJS needs clarification about a referent in a NNS utterance are also discussed in this section, since regardless of the native speaker's intent, such instances are likely to call attention to the interlocutor's language ability.

Although heterogeneous in nature, an overview of the categories of these instances is given to provide some sense of their individual frequencies in the data, in Figure 3.4.

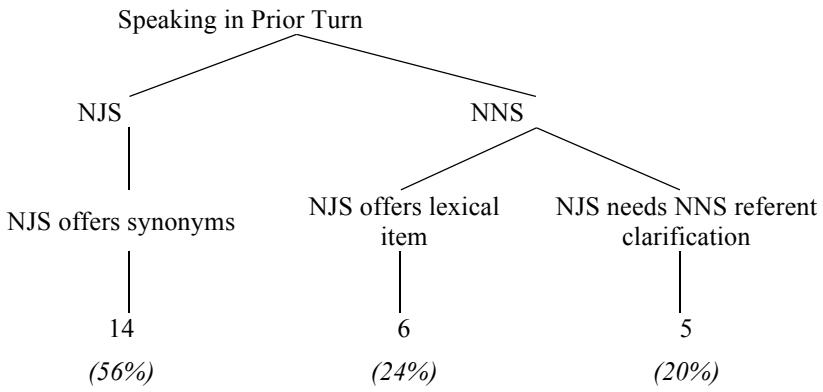

Figure 3.4. Points at which the NJS makes the L2 learner's NNS status relevant.

3.2.3.1. *NJS offers synonyms or explains meaning for NNS*

In 14 instances, NJSs seem to alter their language for the benefit of the NNSs by providing either synonyms or explanations. In doing so, the native speakers recognize the NNS status of their interlocutors and provide a rich source of additional positive evidence, often producing two or more nearly synonymous forms or formulations within the same semantic or pragmatic context. These instances of modified speech therefore serve as valuable resources to the NNS interlocutors, who are able to hear multiple correct yet varied ways of expressing similar semantic content. They also more straightforwardly serve as resources to L2 learners with lower language abilities, who may recognize the meaning of only one of several nearly synonymous formulations.

Of these 14 cases, again a majority, 9 (64%), occurred in only two recordings: those of the two least experienced speakers (Recordings 25 and 26). The native speakers

seem to consciously modify their ways of speaking either by stating that a particular word might be too difficult for the NNSs, or by explicitly asking the NNSs if they understand a particular word before continuing—although they do not always wait for an answer, as seen in the following example.

(22) The non-native speaker has just asked if couples spend Christmas together in Japan. [Recording: 26-JE, IU 239]

1		NJS	*ge-*	*genmitsu-ni*	*iu*	*to,*
				strict-OBL	say	COND
			‘strictly speaking,’			
2	→	NJS	*genmitsu*	*tte*	*muzukashii*	*ka.*
			strict	QUOT	difficult	Q
			‘*genmitsu* is difficult huh.’			
3		NNS	*un*	*gen-*	*genmitsu* --	
			RT		strict	
			‘yeah *genmitsu* --’			
4	→	NJS	*kuwashiku*	*iu*	*to,*	
			detailed	say	COND	
			‘speaking in detail,’			
5		NNS	*a [ao:]*	*hai*	*hai.*	
			RT	yes	yes	
			‘ah yes yes.’			
6		NJS	*un.*			
			RT			
			‘yeah.’			
7	→	NJS	*kibishiku.*			
			strictly			
			‘strictly.’			
8		NNS	*kibishiku.*			
			strictly			
			‘strictly.’			

9	NJS	*kuwashiku*	*iu*	*to,*	
		detailed	say	COND	
		'speaking in detail,'			
10	NNS	*hai*	*hai*	*hai*	*hai.*
		yes	yes	yes	yes
		'yes yes yes yes.'			
11	NJS	*kurisumasu-wa*			
		Christmas-TOP			
		'Christmas is,'			

In Example (22), the native speaker acknowledges the difficulty of *genmitsu*, and rewords his own phrase from line 1 *genmitsu ni* 'strictly' in two other ways (*kuwashiku* 'detailed' and *kibishiku* 'strictly', in lines 4 and 7) based on his awareness that the NNS may not understand that specific formulation, but may be familiar with one of the others.

The NNSs typically respond with affirmative reactive tokens, but occasionally also repeat the NJS synonym(s) or part of the NJS explanation; both types of responses are illustrated by the following example.

(23) The non-native speaker asks the native speaker what his graduation thesis is about (which is how to equalize educational opportunities across socio-economic class). [Recording: 26-JE, IU 755]

1	NNS	*eto*	*so- so- so-*	*sotsuron-wa*		*dou?*
		DM		graduation.thesis-TOP		how
		'um how about your graduation thesis?'				
2	NJS	*sotsuron-wa*		*ne,*		
		graduation.thesis-TOP		RT		
		'as for my graduation thesis,'				
3	NJS	*ano:::,*				
		RT				
		'um,'				
		(2 IUs omitted)				

4 → NJS *hinkon* *tte* *muzukashii* *yo* *ne,*
poverty QUOT difficult IUFP IUFP
'*hinkon* is difficult isn't it,'

5 → NJS *eto* *binbou,*
RT poor
'um *binbou*,'

6 NNS *binbou,*
poor
'*binbou*.'

7 → NJS *mazushii.*
poor
'poor.'

8 NJS *hai.*
yes
'yes.'

9 NNS *hai.*
yes
'yes.'

10 NNS *binbou-no* *hito?*
poor-GEN person
'poor people?'

11 NJS *un.*
RT
'yeah.'

12 NJS *binbou-no* *hito-ga,*
poor-GEN person-NOM
'poor people are,'

In Example (23), which features the same two speakers as in (22) above, the NJS once again acknowledges the possible difficulty of a lexical item, *hinkon* 'poverty' in line 4, and offers a more commonly used synonym: *binbou* 'poor' (line 5). The NNS repeats *binbou* 'poor' after the NJS in line 6—and further demonstrates his understanding with the

reactive token *hai* ‘yes’ in line 9 and the phrase *binbou no hito* ‘poor people’ in line 10, prompting the NJS to continue with the same phrase. However, such responses on the part of the NNS do not necessarily provide evidence that he has understood the native speaker’s original word choice, *hinkon* ‘poverty’, nor the alternate synonym, *mazushii* ‘poor’.

In summary, cases in which the NJS explicitly modified his or her language for the NNS not surprisingly took place mainly in conversations with less experienced native speakers, and such accommodations were most often met with affirmative response tokens on the part of the NNS, though occasionally with repetitions of the modified language.

3.2.3.2. *NJS offers unsolicited lexical item*

In these six cases, the NJS seemed to notice that the NNS was experiencing a word search or struggling with how best to word something, and despite the lack of an initiating inquiry on the part of the NNS, the NJS offered a lexical item.

In all of these instances the NNS then continued speaking, only repeating the NJS-offered form in 2 of the 6 cases, as in the following example.

(24) The speakers are discussing what to make for dinner on the following night.
[Recording: 8-JE, IU 265]

1	NNS	*jaa*	*ano,*
		DM	DM
		‘well um,’	
2	NNS	*udon*	*to,*
		udon.noodles	and
		‘udon and,’	

3 NNS *satsumaimo [satsuaimo] -ni* *su-ru?*
sweet.potato-OBL do-NPST
'should (we) have sweet potato?'

4 → NJS *satoimo?*
taro.root
'taro?'

5 NNS *un sa- to- --*

6 → NNS *satowaimo,*

7 NJS *satoimo.*
taro.root
'taro.'

8 NNS *sa- --*

9 → NNS *satoimo-ni* *su-ru?*
taro.root-OBL do-NPST
'should (we) have taro?'

10 NJS *un.*
RT
'yeah.'

In Example (24), the NNS repeats the unsolicited lexical item *satoimo* 'taro root' in line 6 (versus his earlier mispronunciation of either *satoimo* or *satsumaimo* 'sweet potato' in line 3), before later re-initiating the substantive part of the conversation. In 2 of the 6 cases, the NNS repeated the unsolicited form in this way; in another 3 of 6 cases, the NNS did not repeat after the NJS-offered word but at least acknowledged it.

In summary, most (5 of 6) instances in which the native speaker offered an unsolicited lexical item were met with acknowledgement and sometimes repetition on the part of the non-native speaker, before the NNS continued speaking. While it was very rare for a native speaker to suggest an unsolicited lexical item to a NNS interlocutor, in effect

interrupting the L2 learner, it is worth noting that 4 of these 6 instances in the corpus (such as Example (24)) occurred in one conversation: Recording 8, which featured a married couple. This seems to indicate that even among close friends and acquaintances, there is great cultural value placed on a smooth conversation without interruptions; native speakers may therefore be hesitant to interrupt their non-native interlocutors with unsolicited vocabulary words, unless they are very closely related, such as through marriage.

3.2.3.3. *NJS needs clarification about a referent in a NNS utterance*

As will be examined in detail in Chapter 5, subjects are often left unrealized in Japanese conversation. Though it might, then, be expected that a conversation between native and non-native speakers in a language like Japanese (in which subjects are not marked on the verb) might often result in confusion about the subject referent, this type of confusion caused by NNS utterances was exceedingly rare in the present data. The only five occurrences (where the NJSs explicitly indicated their confusion and sought clarification) took place across five different recordings (2, 7, 10, 16, and 25), including those of both very experienced (7, 10) and far less experienced (25) speakers.

A native speaker interlocutor may choose to explicitly signal his or her lack of understanding about a NNS referent primarily for the sake of clarity of communication; in such moments the native speaker (inadvertently or not) draws attention to a learner's NNS status, whether or not the indication of their non-comprehension turns out to be beneficial to the NNS's learning ability. The following are two examples.

(25) The native speaker is showing off the souvenirs he received at a friend's wedding. [Recording: 7-JE, IU 919]

1		NJS	*shichimi*	*mo*	*morat-ta*
			seven.spice.blend	also	receive-PST
			'(I) also got *shichimi*.'		
2		NNS	@@		
3		NJS	*shichimi-wa*		*ichiban* --
			seven.spice.blend-TOP		number.one
			'*shichimi* is the most --'		
4	→	NNS	*kore-wa*	*yappari,*	
			this-TOP	after.all	
			'is this actually,'		
5		NNS	*kimat-te-i-ru?*		
			be.decided-CONJ-PROG-NPST		
			'conventional(ly decided)?'		
6	→	NNS	*kou*	*iu.*	
			in.this.way	say	
			'this kind of (thing).'		
7	→	NJS	*ha?*		
			RT		
			'huh?'		
8	→	NNS	*kou*	*iu* ..	*omiyage-wa,*
			in.this.way	say	souvenir-TOP
			'this kind of souvenir,'		
9		NJS	*iya*	*kimat-te-i-nai.*	
			DM	be.decided-CONJ-PROG-NEG	
			'no, it's not conventional.'		

(26) The two speakers have been talking about a mutual friend, named Edo-chan. [Recording: 16-JE, IU 977]

1		NNS	*senshuu*,	
			last.week	
			'last week,'	
2	→	NNS	*kanojo-no*	*okaasan.*
			3.FEM-GEN	mother

3 NNS *ni* *at-ta.*
OBL meet.PST
'I met her mom.'

4 NJS *un.*
RT
'yeah.'

5 → NJS *e?*
RT
'eh? [shows confusion or surprise].'

6 NNS *e- e- Edo-chan-ga,*
PN-DIM-NOM
'Edo-chan,'

7 NJS *un.*
RT
'yeah.'

8 → NNS *Edo-chan-no* *kanojo-no* *okaasan-ni* *at-ta.*
PN-DIM-GEN 3.FEM-GEN mother-OBL meet.PST
'(I) met Edo-chan's girlfriend's mother.'

9 NJS *a* *at-ta* *no [attan]* *da.*
DM meet.PST IUFP COP
'ah so (you) met (her).'

10 NNS *hai.*
yes
'yes.'

In Example (25), the native speaker needs clarification about the non-native speaker's referent for *kore* 'this' in line 4, even after the NNS seems to realize the referent may have been unclear and offers an additional IU towards clarification, *kou iu* 'this type of (thing)' in line 6. The NJS seeks clarification with an interrogative *ha?* 'huh?' (line 7) and the NNS then provides a more elaborated noun phrase (line 8) to clarify that he was asking if *shichimi* is a conventional souvenir or party favor to give out at a wedding reception.

In Example (26), the native speaker is uncertain of the referent of the NNS noun phrase *kanojo-no okaasan* 'her mother' in line 2. After the NJS uses the reactive token *e?* to indicate confusion or surprise (line 5), the NNS clarifies, using a more elaborated noun phrase: *Edo-chan-no kanojo-no okaasan* 'Edo-chan's girlfriend's mother' in line 8.

In summary, though it only occurred five times in the data, native Japanese speakers occasionally need to seek clarification regarding the referents of non-native speaker utterances. They do so using interrogative reactive tokens; the non-native speakers seem to have no trouble interpreting such utterances as requests for clarification, since they immediately offer more specified noun phrases.

3.3. Discussion

This qualitative chapter has focused on the second research question introduced in Chapter 1: **What kinds of explicit and implicit interactional feedback (comprising negative as well as positive evidence) do native speakers provide in conversation with non-native speakers?** In order to investigate what types of resources are provided to non-native speakers through various dialogic types of conversational exchange, this chapter sought to address the broad question: **What happens in naturally-occurring conversation when the NNS speaks non-natively?**

Instances in which the NNS status of the L2 learners was made relevant were broadly categorized as those that were initiated by the NNS, either through an L2 error, or through an inquiry about a lexical item, versus those that were initiated by the native

speakers. An examination of the types of dialogic exchanges that transpire in each type of interaction revealed that non-native speakers are exposed to a wealth of information during naturally-occurring conversations with native speakers, including positive evidence in the form of native speaker utterances and recasts as well as indirect negative evidence in the contrast between NJS recasts and NNS errors, or in NJS-provided substitute lexical items.

It is interesting to refer to the vast body of literature on repair (recasts) in conversation analysis, which demonstrates that such dialogic interactions occur in ordinary talk among native speakers as well. These interactions have many different functions; however, their main goal is to ensure communication. Speakers may use self-repair in cases where they realize they have selected an inappropriate lexical item; where they start to sense signs of 'pre-disagreement' from their interlocutor as they are producing the utterance; or simply where find they do not know how best to continue their utterance (Schegloff 1979). Both self- and other-initiated repairs serve a variety of functions, including circumventing disagreement (Schegloff 1987: 107) or offering explanations (Schegloff 1992: 1312). When other-initiated corrections do occur, they may be downgraded in terms of the confidence or certainty with which they are presented, e.g., presented as jokes or using a question format (Schegloff et al. 1977: 378). However, in asymmetrical L1-L2 interactions (when the repair pertains to linguistic ability in one participant's native language), this confidence-downgrading is not necessary on the part of the native speaker, as both conversational participants are aware of their differing knowledge and experience in the language (Hosoda 2006). This allows for more overt corrections or recasts on the part of the native speaker.

This imbalance between the two speakers with regard to their language ability also allows for the non-native speaker to easily query the native speaker's linguistic knowledge for missing lexical items, often implicitly (e.g., by simply using rising intonation on a lexical item or a code-switched L1 term). In the present data, nearly all such inquiries (33 of 35, 94%) resulted in a helpful response from the native speaker; and nearly all (29 of 33, 88%) NJS-provided suggestions to these NNS-initiated points resulted in NNS acknowledgement and/or uptake. In contrast, the native speaker (other-initiated) recasts of NNS errors—a majority of which were grammatical in nature—did not result in such high rates of NNS uptake: only 41% (9 of 22) of NJS-initiated corrections or recasts resulted in NNS uptake; the remaining errors either resulted in acknowledgment or no NNS uptake. This may indicate that non-native speakers tend to be more receptive to native speaker assistance (in the form of either positive or negative evidence) when the non-native speaker is the one to recognize the need for this assistance and initiate such a sequence. It would make sense that NNSs would be more likely to notice either positive or negative evidence under such circumstances; this type of noticing is a potential precursor to learning (Inagaki & Long 1999) that can trigger processes of acquisition (Schmidt 1994, R. Ellis 2005).

Based on the examples discussed in this chapter, particularly those of NJS-initiated recasts and instances in which the NNSs produce self-directed repetitions after the positive evidence provided by the NJSs, there is evidence that non-native speakers make use of moments of conversational feedback for improving their L2 ability, by repeating after NJS recasts (which provide both positive and negative evidence, in the same discourse-pragmatic context and conveying the same semantic content). There is additional evidence

that they make use of other aspects of the positive evidence available from the input, even when it is not specifically offered as feedback, for example when repeating after NJS-produced utterances (to aid in processing of unfamiliar or challenging material). Importantly, all such utterances are produced in a naturally-occurring context, not limited to use of specific grammar or vocabulary to discuss predetermined topics, as might be the case in a classroom setting.

Learners seem more likely to be aware of moments when they cannot produce the desired lexical item (as evidenced both by lexical item inquiries and self-corrections), and less likely to recognize when they cannot produce the intended grammatical construction, particularly when they are still in the process of acquiring a native-like grammar. This helps explain why, as seen in Figure 3.2, the NNS self-corrected errors in the present study were half lexical and half grammatical, while the native speaker recasts occurred in response to a greater proportion of lexical rather than grammatical errors. These findings are in line with some SLA studies on computer-mediated communication (CMC) Spanish language data (Lee 2002) and with classroom data, such as Lyster (1998: 266), who found that (French language) L2 instructors provided consistently high rates of feedback on phonological and lexical errors, while grammatical errors "received corrective feedback at a lower rate, but accounted for the highest number of corrective feedback moves in the database nonetheless."

Another finding of this study was that certain types of interactions—including overall errors in general (and therefore recasts), NNS inquiries about lexical items, and NJS modifications of speech—tend to occur much more frequently in conversations with less experienced NNSs, represented in this study by the two NNSs in Recordings 25 and

26. Though all 12 recordings were examined for each phenomenon discussed in this chapter, these two recordings alone contained 17 of the 22 (77%) NJS recasts, 19 of the 56 (34%) uncorrected errors, 45 of 100 (45%) overall errors, 9 of 15 (60%) inquiries about lexical item meanings, 13 of 20 (65%) non-communicative repetitions, and 9 of 14 (64%) instances of the NJS modifying his or her speech. Only one phenomenon demonstrated a different skewing: 4 of 6 instances of the NJS offering an unsolicited lexical item occurred in Recording 8, which featured a married couple. Other phenomena were relatively evenly distributed across all recordings and NNSs of all levels of experience, specifically NNS self-corrections of errors and NJSs indicating their confusion with a NNS discourse referent. Though it is not surprising that less experienced learners would make more L2 errors than more experienced NNSs, it is nevertheless interesting that they receive a vast majority of the recasts compared to more experienced speakers—perhaps indicating native speakers' hesitancy to provide corrective feedback to more advanced L2 speakers—and a majority of the NJSs' conscious attempts to modify or clarify their language.

While much of the literature on L2 acquisition focuses on negative evidence (in contrast to the importance placed on "the input" or positive evidence in first language acquisition), this study has assumed an important role for positive evidence in L2 learning as well. Many of the sequences that have been discussed in this chapter, such as native-speaker corrective repetitions that contrast with learner formulations in the same semantic and pragmatic contexts, could play a role in L2 acquisition. In conversations with native speakers, non-native speakers are exposed to a wide range of positive evidence, unique to naturally-occurring interactions and shaped by the surrounding discourse context. Moreover, when a NNS—particularly a less experienced one—speaks non-natively in a

naturally-occurring conversation, he or she is able to reap the benefits of exposure to various dialogic processes including native speaker recast sequences and native speaker accommodation, as the native speaker modifies his or her speech with the NNS status of the interlocutor in mind.

3.3.1. Pedagogical Implications

Centered within the framework of usage-based theories of acquisition, the findings in this chapter about the types of conversational exchanges that occur when an L2 learner speaks non-natively are also relevant to L2 pedagogical applications.

Beginning with several examples of pedagogical applications for use in an L2 classroom setting, to the extent that this data from interactions between close acquaintances can be extrapolated to the majority of learners' L2 interaction time (though of course not to all of their L2 interactions), it seems that it would be beneficial to focus more on specific, frequent grammatical constructions used in conversation practice in the classroom, and to emphasize to students the necessity of expanding their vocabulary in their own study time, outside of class; it is clear that classroom interactions alone could not prepare students for the range of topics that may be covered in naturally-occurring conversation, or for the specialized vocabulary that may become useful or necessary when discussing particular subjects. This strategy is also based on the assumption that armed with frequent structures, NNSs—particularly those at an intermediate level or higher—can find their way even to lexical items they may have been lacking during natural

conversations with native speakers. Moreover, while language courses can help L2 students by preparing them for what they might find in natural discourse (for example, non-realization of subjects in Japanese), they should also ensure that students somehow receive real experience with this, not just information about it. This could be done, for example, by building time into the curriculum for lengthier free conversation practice, or by facilitating (and potentially requiring) language exchanges with native Japanese speakers, whether in person or mediated by Computer-assisted language learning (CALL) technologies to digitally connect classrooms of students in one country to those in another.

The data show that learners do not need access to classroom instruction in order to get both instructive positive and negative evidence. Learners receive a range of positive evidence from the morphosyntactic and discourse-pragmatic information they are exposed to when participating in one-on-one conversations with native speakers, as well as ample speaking time and a native speaker's attention to their language production, and potential feedback containing negative evidence. Additionally, if L2 learners are willing, it is worth reminding them to tell native speakers that they would be grateful to have their L2 errors corrected in conversation.

Many of the findings from this chapter are relevant to theories of second language acquisition, in particular because this study has sought to answer the question: **What kinds of explicit and implicit interactional feedback (comprising negative as well as positive evidence) do native speakers provide in conversation with non-native speakers?** This question is integral to the broader inquiry of how conversation with native speakers supports learning.

The answer undoubtedly depends on how willing native speakers are to give feedback in natural conversation; nevertheless, in casual interactions with close friends and acquaintances, such as the data used for this study, L2 learners may receive (less targeted but) more and more-varied types of feedback in naturally-occurring conversation in comparison to a typical L2 classroom setting. (This is partially due to all of the logistics of language courses, involving time constraints and fellow students' varying levels and needs; there would be more potential for feedback in time intensive language courses or private lessons.) On the one hand, although small grammatical errors may be more likely to pass uncorrected in naturally-occurring conversation, learners may also receive more individual feedback on other aspects of their L2 abilities, such as help with specific lexical items, positive reinforcement of most structures via affirmative reactive tokens (and more speaking confidence, which could lead learners to seek out more opportunities to practice their speaking abilities and thus improve them), and feedback about when they have not made their discourse referents clear, among other things.

Ongoing naturally-occurring conversation is complex, dynamic, and interactional; it thus presents particular challenges for less experienced non-native speakers, who certainly will not be able to register every single instance of positive or negative evidence or feedback that they receive. Nonetheless, this study has shown that, as expected, L2 learners, including those with relatively little experience, do notice and respond to native speaker input and recasts, using tokens of acknowledgement, repetitions, and even uptake of native speaker structures in their own subsequent utterances.

While some of these benefits could also be gained from having L2 learners practice speaking with their peers in a classroom setting, others are specific to conversations with

speakers who are more advanced than the learners (i.e., with highly fluent or native speakers): beginning level learners in particular would not have the necessary experience with L2 interactions, and thus would not have the necessary mental representations or exemplars in place in order to correct other beginning learners on their usage errors (they might be able to make small concrete lexical or grammatical corrections, but would not be able to help with discourse-pragmatics). In contrast—used in conjunction with ongoing classroom instruction—naturally-occurring conversations with native speakers (contrary to what many beginning language learners and teachers may believe) can benefit even lower-level learners (e.g., those who would fall under the "Intermediate Mid" classification according to the ACTFL proficiency guidelines), because lower-level L2 speakers receive more accommodation and specific linguistic feedback in conversations with native speakers than do higher-level L2 speakers, as this chapter's findings have shown.

It is worth noting that many of the interactional sequences that have been identified in this chapter could function as potential L2 learning mechanisms, such as NNS lexical item inquiries in addition to native speaker recasts and NJS-initiated points. The findings in this chapter could serve as a resource in further research and in the development of controlled studies of some of these processes as learning mechanisms. This study also serves to address a gap in the SLA literature to date, a majority of which has either centered around the acquisition of English or other European languages or has primarily employed experimental methodologies in classroom settings rather than natural conversational L2-learner data.

3.3.2. Areas for Further Research

In addition to future controlled studies of the dialogic structures identified in this chapter as L2 learning mechanisms, this study lays the groundwork for several other areas of future research.

Although it is quite difficult, if not impossible, to control for adult L2 learners' experience with and exposure to their second language, there is a need for more controlled studies involving native speaker and non-native speaker conversations. Such studies could better control for the non-native speakers' L2 levels by issuing detailed written and oral tests in advance, for example, or could control the data collected in other ways, such as by restricting the conversations to relatively narrow, specific topics.

Studies that include more lower-level speakers (similar to those in Recordings 25 and 26) would also be valuable, as the sample size of speakers at that level was comparatively small in the present data. Additionally, it would be useful to conduct the same type of study but based on a much larger corpus of NJS-NNS conversational data to allow for more in-depth quantitative analysis to accompany the qualitative discussion.

Lastly, it would also be worth conducting a longitudinal study, using conversations with the same L1-L2 pairs of speakers over time (or by shuffling the L1-L2 pairings, but including the same group of L2 speakers over time). This type of study—especially one with more L2 learner participants—would show less influence of the learners' individual differences, and more effectively show the impact of the learners' experience with conversations with native speakers. In particular, it would be useful for future studies to make note of the types of structures that elicit corrective feedback for specific NNSs

during naturally-occurring conversation, and then to follow up (experimentally) with each NNS on his or her abilities with those particular structures (although, again, it would be quite difficult to control for the learner's exposure to other input during the intermediate time, especially if the learner is living in Japan).

Chapter 4: Noun-modifying Constructions

4. Introduction

In the previous chapter, we have seen that participation in conversations with native speakers provides L2 learners with both positive and negative linguistic evidence from a variety of dialogic interactions in naturally-occurring discourse-pragmatic contexts. This chapter serves as the second of three case studies of Japanese conversation, continuing to investigate the extent to which the grammars of non-native speakers exhibit the same relationships between form and function as those of native speakers. Specifically, this chapter focuses on Japanese noun-modifying constructions (NMCs), and on the types of noun-modifying constructions used by Japanese native and non-native speakers. As suggested below, there are various typological differences and pragmatic reasons why it may be difficult for non-native speakers to acquire a native speaker-like usage of Japanese NMCs. Examined here are the various structural types of NMCs used by both sets of speakers, as well as the semantic types of nouns being modified, and the functions of the noun-modifying constructions.

I use the term noun-modifying constructions (NMCs) here very broadly to refer to any type of construction used to modify a noun in Japanese. One important sub-type of NMCs are generalized noun-modifying clause constructions (GNMCCs), a classification introduced by Matsumoto and Comrie, as explained further below. Although I refer to GNMCCs as a sub-type of NMCs, I prefer to view all types of NMCs as forming a continuum: since all such constructions carry out similar discourse functions and share

some structural features, it is sometimes difficult to distinguish between GNMCCs and other types of NMCs.

4.1. Background to Noun-modifying Constructions in Japanese

Noun-modifying constructions in Japanese carry out functions similar to those of relative clauses or complement clauses in English. In English and similar languages, relative clauses usually function to identify a referent or set of referents by restricting a large set of entities denoted by a head noun down to a specific subset or a smaller range of entities (e.g., Keenan 1985). Complement clauses in languages like English function as an argument of a predicate (e.g., Noonan 1985); in Asian languages, constructions with complement clause-like interpretations can more broadly be said to have the function of specifying the content of the accompanying head noun (Comrie & Horie 1995). These types of constructions can all be described as serving restricting or specifying functions for speakers seeking to identify the referent of a head noun for their interlocutors.

Japanese clausal noun-modifying constructions have a fundamentally different structure from relative or complement clauses in English (Comrie 1998b). It follows that such constructions would present a challenge to second language learners of Japanese, particularly those whose native language is English. Japanese clausal NMCs share areal characteristics with other East Asian languages (Comrie 1998a, 1998b); in particular, Korean shares similar relativization strategies with Japanese (Song 1991). However, such constructions could still present difficulties to native speakers of Korean and Chinese: although Korean and Chinese NMCs, like those in Japanese, lack a clear dichotomy

between relative and complement clause types (Matsumoto 1989), in contrast to Japanese, those languages have a morpheme that marks embedded clauses as such (Matsumoto 1997: 170).

In Japanese, all noun-modifying constructions occur pre-nominally, without any overt markers of relativization or complementation (e.g., Matsumoto 1999, Ozeki & Shirai 2010). Because of this, Japanese noun modification, whether by words, phrases, or clauses, can be viewed as a continuum (Teramura 1980, Kato 2003); in fact, it is often difficult to distinguish between adjectival, nominal, and clausal modification (Ozeki & Shirai 2010).

Focusing on NMCs that share the discourse function of restricting or specifying information regarding discourse referents, in this chapter I will investigate Japanese L2 learners' use of clausal noun-modifying constructions, as well as less complex attributive adjectival and genitive NMCs, comparing their NMCs with those used by their Japanese native speaker interlocutors.

4.1.1. Generalized Noun-modifying Clausal Constructions (GNMCCs)

Comrie (1996: 1077-8) has observed that whereas English has a distinct set of constructions that are used to express relative clause meanings—often marked by potentially case-marked relative pronouns and analyzable as containing a syntactic "gap"—in Japanese, the basic structure that often receives a relative clause interpretation when translated into English is simply a head noun with a preceding modifying clause. The following are two examples of this Japanese structure (produced by native Japanese

speakers, as are all examples in section 4.1); the modifying clauses, given in brackets, would be grammatical as stand-alone clauses as well:

(1) [*sotsugyou* *shi-ta*] *hito*
graduate do-PST person
'a person who graduated'

(2) [*Harii Pottaa-o* *un-da*] *kokudo*
Harry.Potter-ACC produce-PST country
'the country that produced "Harry Potter" [the book]'

In contrast to constructions with similar meanings in European languages, the Japanese noun-modifying construction contains no (potentially case-marked) relative pronoun and thus no overt reference to the head noun within the modifying clause (Comrie 1996). Moreover, while some such constructions in Japanese may seem to exhibit potential "gaps," it is important to remember that arguments are not marked on the verb and are often not expressed in spoken Japanese clauses if they are recoverable from context (as seen in Chapter 3); this makes the lack of an overt argument impossible to take as evidence for the head noun's specific role in the clause. Matsumoto (2007: 373) notes that interpretations of the head noun's relationship to the clause are heavily dependent on pragmatic context, arguing that interpretations of the head noun as a clausal core constituent are "merely default readings" but are by no means the only plausible construals. As an example, Matsumoto (1997: 93) gives the following utterance, for which (3a) might be preferred over other interpretations as the "default reading;" however, the interpretations given in (3b) and (3c) are also possible, depending on the discourse context and the "world-view" of the construer.

(3) [[*hon-o* *kat-ta*] *gakusei*]-*wa* *doko* *desu* *ka.*
book-ACC buy-PST student-TOP where COP Q
a. 'Where is [the student (who) bought a book]?'
b. 'Where is [the student (from whom) ( ) bought a book]?'
c. 'Where is [the student (for whom) ( ) bought a book]?'

Whereas (3a) involves a core-role interpretation of the head noun (*gakusei* 'student'), namely that the student is the subject of the modifying clause, (3b) and (3c) involve non-core-constituent interpretations for the role of the head noun. Matsumoto (2007: 373) offers two examples of the type of prior linguistic context that would override this preference for a core role interpretation, making either (3b) or (3c) the preferred interpretation. (The construal in (3b) would be preferred in the context of (4), while the construal in (3c) would be preferred in the context of (5).)

(4) [[*hon-o* *kat-ta*] *gakusei*]-*kara* *tsukue* *mo* *kat-ta.*
book-ACC buy-PST student-from desk also buy-PST
'( ) also bought a desk from the student (from whom) ( ) bought a book.'

(5) [[*hon-o* *kat-ta*] *gakusei*]-*ni* *pen* *mo* *katte-age-ta.*
book-ACC buy-PST student-OBL pen also buy-give-PST
'( ) also bought a pen for the student (for whom) ( ) bought a book.'

Many NMCs allow for multiple possible construals depending on the pragmatic context; some may even require specific culturally shared background knowledge for their interpretation (Matsumoto 1997: 50). Matsumoto therefore cautions against studying only 'default' construals, in the absence of semantic and pragmatic context (1997, 2007).

Comrie (1996) further notes that Japanese has other constructions with the same (modifying clause + head noun) NMC structure, such as the *fact*-S construction, which do

not receive relative clause interpretations when translated into English. In other words, a whole range of English grammatical constructions are all subsumed by a single NMC construction when translated into Japanese.[11] Such findings provide evidence that the functions of the Japanese NMC are much more general than those of relative or complement clauses in languages like English.

Matsumoto (1988) points out the problems with previous work that modeled analyses of Japanese relative clause constructions on syntactic analyses of English, noting that while they may work in some instances, such comparisons often fail, particularly in the case of Japanese "gapless" relative clause-like constructions. An example of a gapless construction appears in (6); the verb *kaitearu* 'to be written' is intransitive and its subject is the noun *kotobuki* 'congratulations', leaving no apparent gap coreferent with the head noun.

(6) [*kotobuki-ga* *kaite-ar-u*] *dorayaki*
congratulations-NOM write-exist-NPST Japanese.dessert
'a *dorayaki* [dessert] that has (the word) "congratulations" written (on it)'

Matsumoto discusses the various possible construals of such constructions in Japanese—necessarily based on "extra-syntactic factors" and shared knowledge (Matsumoto 1988: 168), noting that while construals of relative clauses in English rely on syntax, in Japanese, "the absence of an explicit marker specifying the relation between the head noun and the clause seems to indicate a higher reliance on the semantics and pragmatics" (1988: 172), as in the following examples:

[11] No examples of Japanese *fact*-S constructions were found in my data; an example of an English *fact*-S construction would be: *the fact that I met her*, where the modifying subordinate clause is introduced by the complementizer *that*.

(7) [*kaidan* *nobor-u*] *shiin*
staircase climb-NPST scene
'the scene (in the movie) where (the characters) climb the staircase'

(8) [*sensei-ni* *nar-u*] *gakubu*
teacher-OBL become-NPST academic.department
'a department where (we) [study in order to] become teachers'

Indeed, Matsumoto argues that the lack of case-marking on the head noun is evidence that NMCs cannot be analyzed as involving deletion or movement, noting that in some cases, no specific case markers even exist that could accurately express the relation of the head noun to the clause (1997: 49). The following two examples may help illustrate this type of situation, as the head nouns do not neatly fit into a role that could be indicated by a case-marking particle:

(9) [*bideo tor-u*] *baito*
video to.film-NPST part.time.job
'a part-time job for which (I) film videos'

(10) [*doitsu-go ...* *hanas-u*] *kikai*
Germany-language speak-NPST opportunity
'chances (for me) to speak German'

Comrie (1996: 1078) observes that, unlike in English, "Japanese seems to lack syntactic constraints on the relation between the head noun and the covert coreferential noun in the modifying clause;" this means that a much wider range of core and oblique argument types—in addition to other pragmatically related concepts—may be relativized on in Japanese compared to English. In contrast to the English relative clause construction, which exhibits syntactic constraints on which elements can be relativized on, Matsumoto

(1988) identifies constraints on the way Japanese clausal noun-modifying constructions can be construed in a given situation, depending on pragmatic factors and speakers' knowledge of the world.

A variety of constructions in Japanese, including clausal NMCs (of the English relative clause type), noun complement constructions, and even attributive adjective constructions, could all be viewed as sharing a constituent structure that consists of a clause preceding a noun. Matsumoto observes that "underlying the interpretation of these constructions is the assumption that the clause and the noun are in some way relevant to each other," noting that "the task of construal is to discover the connection" (1988: 173). Matsumoto (1988: 172) therefore proposes that Japanese has a single attributive clause construction, suggesting that "the situations alluded to by the linguistic clues and the interlocutors' 'world-view' play a significant role" in its construal. Into this single attributive clause construction, Matsumoto (1988) groups appositive or noun complement constructions, along with clausal noun-modifying constructions (of the English relative clause type).

Based on such findings, Comrie (2007: 301) has claimed that Japanese, and some other Asian languages, have a "general noun-modifying construction that subsumes translation equivalents of relative clauses" and other types of noun modification. As discussed above, the single construction type in Japanese, which consists of a head noun preceded by a modifying clause, can be interpreted in various ways by Japanese speakers, depending on the pragmatic context (Matsumoto 1988, 1997, 2007; Comrie 1996, 2007). Comrie groups together a set of distinct English constructions as all being translation equivalents of a single construction, not only in Japanese, but in many Asian languages,

and proposes this construction as an areal typological feature (1996, 1998a, 1998b, 2007). He finds the "Japanese type"—versus the "European type"—of noun-modifying clause constructions in a number of East Asian languages, Southeast Asian languages, Dravidian languages, and some Turkic languages (Comrie 1998b).

For the past few years (as of 2014, the time of writing), Matsumoto, Comrie, and Sells have been leading a collaborative investigation of the "Japanese type" of noun-modifying constructions, which they term 'Generalized Noun-Modifying Clause Constructions (GNMCCs[12])' (Matsumoto 2013; Comrie 2013). GNMCCs are defined in terms of their structural elements; they are pre-nominal and they comprise a noun phrase consisting of a head noun and a modifying clause, with no explicit specification of constituents (Comrie 2013).

The predicates of Japanese GNMCCs are typically in finite form (i.e., the modifying clause could also be grammatical as a stand-alone clause), and the grammatical role of the head noun is not overtly marked; this is true whether or not the head is a core constituent of the modifying clause (Matsumoto 1999). Some linguists, focusing only on syntactic structure, have classified Japanese GNMCCs into two types: relative-clause types and appositive-clause (noun-complement) types (Muraki 1970, Okutsu 1974, Inoue 1976), while others who have examined both semantic and syntactic aspects of GNMCCs have adopted different categorizations. Most notably, Matsumoto (1997), using a 'frame semantics' approach, bases her analysis of Japanese GNMCCs on both semantics and pragmatics, resulting in a more nuanced categorization, compared to the division into two structural types, which can account for even those GNMCCs that are neither relative

[12] The acronym 'GNMCCs' is pronounced 'Ginny Macs'.

clauses nor noun complements. Matsumoto thus focuses only on the structure and semantic/pragmatic construal of the GNMCCs, rather than their discourse functions (1997: 9).

In this dissertation, I use the terms 'GNMCC' and 'noun-modifying construction' nearly interchangeably, though I also use 'noun-modifying construction' (NMC) more broadly to refer to any type of noun-modification structure in Japanese, whether or not it contains a finite verbal-predicate modifying clause. Whereas Comrie and Matsumoto focus nearly exclusively on verbal-predicate GNMCCs, I also include other types of attributive noun modification (such as attributive adjectives that precede nouns) in my investigation of NMCs, because all Japanese noun modification can be viewed as forming a continuum (Teramura 1980, Kato 2003), and such constructions share the functions of restricting or specifying the noun they modify. When I use the term 'relative clause (construction)', it refers to relative clauses in English; however in many of the SLA studies discussed in the following sub-section, authors consistently used the term 'relative clause' to describe verbal-predicate GNMCCs in Japanese.

4.1.2. Previous work on relative clauses and SLA

In SLA scholarship, much of the research on verbal-predicate noun-modifying constructions—often referred to as relative clauses—has focused on the order of acquisition of different types of relative clauses, and how this compares to the noun phrase accessibility hierarchy (NPAH) proposed by Keenan and Comrie (1977). The NPAH,

based on a study of over 50 typologically diverse languages, proposes that there is a universal order of relativizability or markedness in types of relativization, ordered from most to least accessible (relativizable), as follows: subject > direct object > indirect object > oblique (or object of a preposition) > genitive > object of comparative (Keenan and Comrie 1977). The implication is that if a particular (more marked and) less accessible type of relative clause construction exists in a given language, then all of the (less marked and) more accessible types above it on the hierarchy are predicted to exist as well (i.e., if a language allows relativization on indirect objects, it will also allow it for relativization on direct objects and subjects).

In SLA literature, this typologically-based hierarchy has been used to predict and test the order of acquisition of relative clause constructions among L2 learners. The NPAH has been held up as universally predicting the order of difficulty and therefore of acquisition of relative clause types in SLA. Based on the notion that unmarked structures will be acquired earlier than marked structures, it is generally agreed upon in the field that order of L2 acquisition in all languages follows the hierarchy (e.g., Gass & Selinker 2001, Ellis 1994, Doughty 1991, Eckman et al. 1988, Gass 1982, 1979, Eckman 1977). While many studies have supported this assumption, most have been conducted on post-nominal relative clauses in European languages; few have examined the order of L2 acquisition of the type of GNMCCs found in Japanese and other SOV languages.

In contrast to studies of post-nominal relative clause L2 acquisition in European languages, studies of the L2 acquisition of pre-nominal noun-modifying constructions have often led to conflicting results with respect to the NPAH; some have even argued that predictions based on the NPAH cannot be applied to languages with GNMCCs at all, as

discussed below. Some experimental studies of Japanese GNMCCs have found that oblique types may be used with equal or greater frequency by L2 learners than those types expected to be less marked, namely, subjects, direct objects, and indirect objects (Sakamoto & Kubota 2000, Roberts 2000), while others have shown that 'relativization' seems to be easier on Japanese direct objects than subjects for L2 learners (Tarallo and Myhill 1983)—all findings that contrast with the predictions of the NPAH. In a study based on a combination of interview data, naturally-occurring data, and classroom data, Ozeki (2005) found that L2 Japanese learners' difficulty with GNMCCs was not affected by the grammatical relation of the head noun to the modifying clause; she therefore argued that GNMCCs in Japanese are different from relative clauses in European languages like English, in effect concluding that the NPAH is not as relevant for L2 acquisition of GNMCCs in Japanese.

Indeed, Matsumoto has cautioned against applying the "universal" findings of the NPAH, corresponding with order of L2 acquisition in European languages, to that of languages like Japanese, precisely because in doing so, researchers have tended to exclude those "unfitting" Japanese NMCs that require a semantic and pragmatic context for interpretation and are thus typologically unlike those in English (2007: 367). As mentioned above, she also cautions against experimental studies that focus solely on the core role-type interpretations of the relationship between the head noun and the modifying clause of Japanese GNMCCs, e.g., subject or object 'relativization'; in Japanese such interpretations "are merely default readings that are preferred only where the context is maximally generalized" (Matsumoto 2007: 373). In commenting on the inconclusive results with respect to whether the NPAH predicts the order of GNMCC acquisition in East Asian

languages, Matsumoto notes that the NPAH "might be one of the factors that influences the comprehension of some (possibly prototypical) constructions, but it is not the single determining factor" (2007: 372).

4.1.3. Noun-modifying Constructions (NMCs)

The noun-modifying constructions examined in this chapter can be viewed as falling at different positions along a continuum of structural complexity, ranging from simple genitive constructions, to attributive adjective constructions, to more complex attributive clause constructions (GNMCCs). While 10 different NMC sub-types are described with respect to the coding scheme presented in section 4.3.1 below, only three of these types—which share the same discourse function to specify or restrict the head nouns they modify—are the focus of the subsequent analyses. These three types are: 1) verbal-predicate GNMCCs whose embedded clauses are finite verbal-predicate clauses, as discussed above, 2) attributive adjective constructions, and 3) genitive constructions. The latter two types differ from Comrie and Matsumoto's GNMCCs in that the NMC does not itself comprise a full clause; however, both of these types perform the same type of restricting and specifying functions as GNMCCs. These latter two types of NMCs are introduced below.

4.1.3.1. Attributive adjective constructions

Japanese has two types of adjectives, traditionally grouped as *i*-adjectives and *na*-adjectives; whereas *i*-adjectives are more verb-like in that they inflect and can be freely used attributively, *na*-adjectives are more noun-like in that they do not inflect and can only be used attributively with the postposition *na* (Ono and Thompson 2009). Although only *na*-adjectives require the copula *da* when used as a predicate (Ono and Thompson 2009), either type of adjective can serve as a predicate. Since *i*-adjectives do not require a copula in their finite, predicative form, an *i*-adjective that precedes a noun can be analyzed either as an attributive adjective, or as a finite adjectival-predicate clause being used to modify a noun, as in a GNMCC. (In fact, Comrie's (1989: 143-144) broad definition of relative clauses includes restrictive attributive adjectives.) Because this study focuses on all NMCs that share the same function, that of restricting or specifying the nouns they modify, I include both attributive *i*-adjective and *na*-adjective constructions in my investigation.

The following examples, all produced by native speakers, demonstrate one prototypical attributive adjective-like use and one more-GNMCC-like (clause-like) use of each type of the two adjectives, illustrating the two ends of the structural continuum of noun modification in Japanese:

i-adjective: *omoshiroi*

(11) *omoshiro-i* *giron*
interesting-NPST argument
'an interesting argument'

i-adjective: *ii*, used in a semi-fixed construction (Ono & Thompson 2009: 135)

(12) *shifuku ...* *o* *kite* *ii* *hi*
plain.clothes ACC wear good.NPST day
'a day when you can wear regular [non-uniform] clothes (to school)'

na-adjective: *byoudou-na*

(13) *byoudou-na* *kenri*
equal-ATTRIB rights
'equal rights'

na-adjective: *mitai-na*

(14) *wakame* *mitai-na* *kaminoke*
type.of.seaweed seeming-ATTRIB hair
'hair that seems like *wakame* seaweed' [lit. 'seaweed-like hair']

Examples (11) and (13) illustrate an *i*-adjective and a *na*-adjective, respectively, being used attributively to modify a noun, while examples (12) and (14) show each type of adjective being used in a more clause-like construction which modifies a head noun.

As further evidence that both types of adjectives can be used in a range of NMCs, both *i*-adjective and *na*-adjective types can be used with the same type of semantically 'light' heads that frequently occur with GNMCC constructions, as discussed further below. The following are examples of each type of adjective occurring with the light head noun, *no* 'one; thing'.

i-adjective: *atarashii*

(15) *atarashii* ***no*-*ga*** *mada* *ar-u* *kara*
new one-NOM still exist-NPST because
'because there are still new **ones** left (/some of the news ones are still left)'

na-adjective: *mitai-na*

(16) *chaperu* *mitai-na* ***no*-*ga*** *futatsu* *gurai*
chapel seeming-ATTRIB one-NOM two about
'there are about two of the **things** that look like chapels'

Ono and Thompson (2009) have also argued that certain finite negative forms of verbs, which end with the negative suffix *-nai*, are lexicalizing as *i*-adjectives, although no clear

examples of such forms undergoing lexicalization were found in my data. Such findings further blur the lines between finite verbal clause constructions and attributive adjective constructions, all used to modify nouns.

4.1.3.2. Genitive constructions

The Japanese 'genitive construction' is often taught in L2 textbooks as functioning to indicate possession. The modified noun is preceded by an argument marked with the genitive particle *no*. The default interpretation of the argument marked with *no* (GEN) is often something resembling the possessor of the noun, as in, e.g., *sensei no komento* 'the teacher's comments'. However the *no*-marked noun actually falls along the continuum of noun modification in Japanese: just as (noun-like) *na*-adjectives require the postposition *na* to be used attributively, Japanese nouns can also be used to modify other nouns in an attributive way when marked with the genitive post-positional case marker *no* (GEN).[13] Some such uses have even become highly conventionalized and lexicalized, for example *onna no hito* 'woman' (lit. 'female GEN person') and *otoko no ko* 'boy' (lit. 'male GEN child').

While some uses of *no* (GEN) in my data are quite straightforwardly modifying nouns in a way similar to possessive constructions or noun-noun compounding in English (as in example (17) below), others require more nuanced semantic/pragmatic interpretations, as in examples (18)-(22) (all produced by native speakers):

[13] I refer to Japanese constructions with the *no* (GEN) particle as the 'genitive construction' for simplicity, acknowledging that 'GEN' fails to capture the broader attributive functions of the construction.

(17) *kaiwa* *no* *jugyou*
conversation GEN class
'conversation class'

(18) *Nihon* *to* *Amerika* *no* *chigai*
Japan and America GEN differences
'the differences between Japan and America'

(19) *gakkou* *no* *hanashi*
school GEN talk
'talk about school'

(20) *kyuu-kai-date* *gurai* *no* *biru*
9-floor-constructed about GEN building
'a building of about 9 floors'

(21) *iro* *no* *maze-kata*
color GEN mix-method
'how to mix colors'

(22) *eki-ni* *ori-ta* *toki* *no* *inshou*
station-OBL get.off-PST time GEN impression
'the [first] impression (you) had when you got off (the train) at the station'

Although all of these are examples of nouns modifying other nouns via the genitive construction, many of them, especially (22), are similar to GNMCCs in that pragmatic or shared contextual knowledge is necessary to interpret the intended referent of the modified noun.

Additionally, some complex GNMCCs may use a combination of various types of adnominal constructions, in some cases linking an entire finite clause to a noun via one or more methods of noun modification, including the *no* (GEN) particle. A particularly complex example follows; this example contains the quotative construction, *tte iu* 'such, (that) kind of', discussed in more detail further below. In this example, *tte iu* 'such, (that) kind of' could have been used to modify the noun *o-mise* 'restaurant' directly, as in: *[...]*

tte iu o-mise '[that] kind of restaurant'. However, *tte iu* was followed by the interrogative particle *ka*, implying the speaker's own doubt about whether or not the restaurant could in fact be described as 'that kind of restaurant'. Because finite clauses ending in the particle *ka* cannot be used to modify a head noun directly without being linked by the intervening *no* (GEN) particle, the particle *no* is used as well:

(23) [*nanka* *hitori-de* *hair-u-ni-wa* *chotto*
like alone-OBL enter-NPST-OBL-TOP a.little

tte *iu* *ka*] *no* *o-mise* *at-ta* *yone?*
QUOT say Q GEN HON-restaurant exist- PST IUFP

'like, it was maybe the kind of restaurant
where (one) is a little (reluctant) to enter it alone'

Head nouns modified by a clause that ends in *tte iu* are a specific sub-type of GNMCC, discussed in more detail below.[14] I have given this example here to illustrate that just as with finite verbal-predicate GNMCCs, the same types of complex, abstract expressions—which rely on non-linguistic factors and pragmatics for their construal—are also possible with the seemingly less complex *no* (GEN) constructions. Such examples once again demonstrate the continuum of noun modification strategies in Japanese: distinguishing between GNMCCs and other types of NMCs is not entirely straightforward. The type of construal required for the comprehension—let alone production—of such structures undoubtedly presents a challenge to non-native speakers of Japanese.

[14] As stated above, this example would also have been grammatical without *ka no*; in that case the translation would have been the same, but without 'maybe'.

4.1.4. Semantic Types of Head Nouns

In studies of first language acquisition, scholars have found that most early relative clauses of English-speaking children have a presentational function, and thus tend to modify a head noun that is lexical (Diessel and Tomasello 2000). In contrast, the early NMCs of children acquiring Japanese and Korean tend to have generic head nouns (Ozeki & Shirai 2010; Kim 1987), such as, in Japanese, *mono* 'thing, one', *yatsu* 'thing', *tokoro* 'place', and *no* 'thing, one'. These NMCs with generic head nouns function in a way similar to restrictive relative clauses, as they are used by children to describe attributes of the head noun, whose referent is often not present in the context (Ozeki & Shirai 2010: 208). In other words, the NMCs with light/generic head nouns tend to have identifying or specifying functions, in contrast to the presentational function of the earliest English relative clauses.

Looking only at *i*-adjective types, Ono and Thompson (2009) have found that attributive adjectives are much less frequent than predicate adjectives in conversational Japanese, and when they do occur, they tend to have 'light' or generic (rather than lexical) head nouns. Examples of such light or generic nouns overlap with those mentioned just above, and also include *koto* 'thing, stuff, matter, one'; *toki* 'time'; *hou* 'direction', etc. Based on Ono and Thompson's findings for *i*-adjectives, Takara (2012) hypothesized that this same pattern would hold for the head nouns of conversational Japanese NMCs in general. He found that light head nouns were indeed very frequent, and additionally that 'heavy' (lexical) heads were relatively rare; when heavy heads did occur, they were either motivated by pragmatics or were used in a fixed expression (Takara 2012).

Such findings have shown that light and generic head nouns are predominant in the GNMCCs and other NMCs of conversational Japanese, especially in contrast to the primarily lexical heads of adnominal constructions in languages like English. Ono and Thompson (2009) also observe that the type frequency of Japanese head nouns following attributive adjectives is relatively low compared to that of English. In other words, Japanese attributive adjectives tend to occur in fixed expressions[15] with a small set of light head nouns, whereas English attributive adjectives are more freely productive, occurring with a larger variety of lexical head nouns. Ono and Thompson note that it is therefore intriguing that [Adj + N] NPs with lexical rather than light heads "appear with surprising regularity in Japanese language textbooks," based on constructed examples (2009: 129); they suggest that this could be due to English influence, or to a 'written language bias' (Linnell 2005). These types of biases in Japanese L2 pedagogical materials may misrepresent the frequencies and types of constructions found in naturally-occurring conversation, affecting, in particular, the L2 production of beginning language learners, or those who have less conversational experience.

An additional observation by Takara (2012: 52) is relevant here: he finds that light head nouns tend to have referents that were mentioned in the previous discourse. Takara reasons that GNMCCs, when embedded in a conversational discourse context, "do not necessarily require 'heavy' nouns as their head nouns if hearers can construe the referent of the head from the previous context" (2012: 52). Takara (2012) suggests that Japanese speakers mainly use heavy head nouns when referring to a specific referent; thus the GNMCC is not used to restrict the reference of the head noun, but simply to add more

[15] Japanese predicate adjectives also tend to be used in fixed expressions, many of which are constructions that involve the word *ii* 'good' (Ono & Thompson 2009), as in example (12) above.

information about the referent. Takara also notes that heavy heads can be chosen in order to avoid ambiguity. However, in other cases, when referents are highly accessible, i.e., they constitute given information, due to the previous discourse context, then light heads will be more likely than heavy heads in conversations among native Japanese speakers (Takara 2012). One implication of this finding is that the kind of de-contextualized NMCs that are often the focus of L2 classroom exercises may tend to have a higher frequency of heavy (lexical) head nouns compared to the NMCs in naturally occurring Japanese conversation; this may be because the referents of light head nouns are construable only from discourse context.

Thus, in addition to the challenge presented by typological structural differences between Japanese and L2 learners' first languages, it seems that the types of NMCs taught in language classes often differ from those used by Japanese native speakers in naturally-occurring conversation. Due to such factors as English influence, written language bias, and a lack of prior dialogic context containing mentions of referents, NMCs whose head nouns are semantically 'light' or generic may be underrepresented in the language used in classroom settings.

To investigate the extent to which NNSs' usage of light versus lexical ('heavy') head nouns mirrors that of native speakers, I coded the head nouns of all NMCs in my corpus for semantic type. Takara (2012: 35) argues that it is not appropriate to divide head nouns into only two categories, i.e., heavy versus light; rather, he argues that the weight of head nouns can be viewed as comprising a continuum. While I agree with this argument, for the purposes of this analysis, I have classified the head nouns in my data as belonging

to one of three discrete categories: 'light', 'lexical', and an intermediate 'generic' category, as described in detail in section 4.3.2 below.

4.2. Goals of this Analysis

As described above, among the types of NMCs taught in Japanese L2 classrooms, GNMCCs that focus solely on "default" core-role interpretations of the relationship between the modifying clause and the head noun may be overrepresented. This skewing could potentially create difficulties for L2 learners who must be able to correctly interpret the more abstract or pragmatically-based GNMCCs they encounter in conversations with native speakers. Compared to native Japanese speakers, NNSs whose main sources of linguistic input are classroom-based interactions encounter only a small range of verbal-predicate GNMCCs. Without frequent exposure to the broad range of verbal-predicate GNMCCs used by native speakers, NNSs may turn to less complex adnominal structures to carry out similar restrictive and specifying functions. For native English speakers in particular, attributive adjective as well as *no* (GEN) NMCs are more similar to the types of L1 constructions they are familiar with in English. These types of NMCs are also typically taught earlier in Japanese language courses; in the popular beginning Japanese textbook series, *Genki* (Banno et al. 2011), for example, the *no*-genitive construction is taught in the 1st unit and attributive adjectives in the 5th unit, whereas basic verbal-predicate GNMCCs are introduced in the 9th unit.

I therefore hypothesize that NNSs will use a higher frequency of *no* (GEN) and adjectival constructions compared to verbal-predicate GNMCCs, which are structurally more complex and which are more likely to require more abstract, pragmatically based interpretations. This type of finding would be consistent with findings for first language acquisition of Japanese showing that children acquire attributive adjective NMCs prior to verbal-predicate GNMCCs. As Ozeki & Shirai (2010: 209) have suggested, in the process of acquiring more complex GNMCCs, Japanese children "may rely on adjectival modification that they have already acquired;" they note that since Japanese NMCs "are formally continuous, it is not surprising if there is a continuum in terms of their function, use and acquisition."

Furthermore, we have seen that NMCs whose head nouns are semantically 'light' or generic may be underrepresented in Japanese L2 pedagogical materials, due to English influence or 'written language bias', compared to those found in the conversational Japanese of native speakers. L2 classroom practice with de-contextualized NMCs may also lead to more exposure to NMCs with lexical—rather than light—head nouns, since light head nouns of NMCs tend to have referents that were mentioned in a prior conversational context. I therefore further hypothesize that constructions with light head nouns may be more challenging for NNSs, and that compared to native speakers, NNSs will produce more NMCs with lexical heads and fewer with light heads.

In this chapter, I will investigate these hypotheses with the data from my corpus. This will allow for a comparison of non-native speakers' use of NMCs as a group versus native speakers' use as a group; I will also contrast types of NMCs produced across

individual non-native speakers, enabling us to see progression across individual L2 learners.

4.3. Coding

Each of the noun-modifying constructions (NMCs) in the present corpus was identified by reading through each conversation; each was then coded as one of 10 types of NMC (three of which have been discussed above). Each of the 10 NMC types found in the data is introduced and exemplified below.

4.3.1. Coding for Types of NMCs

Type 1: *no* NMCs. As discussed above, *no* NMCs are those simple constructions that take the form of a modifier marked with the genitive particle *no* and a noun, as in the following examples:

(24)	1-JC NJS	*kaiwa*	*no*	*jugyou*
	(IU 41)	conversation	GEN	class
		'conversation class'		
(25)	10-JE NJS	*nana-sai*	*no*	*toki-ni,*
	(IU 520)	seven-CL	GEN	time-OBL
		'when (you) were seven years old,'		

Type 2: lexicalized NMCs. These are frequently used, conventionalized NPs, which may even be taught to and learned by non-native speakers as single lexical items. Nearly all instances of lexicalized NMCs were of the *no* NMC form, but highly conventionalized.

(26) 7-JE NJS (IU 712)
otoko no hito?
male GEN person
'(a) man?'

(27) 7-JE NJS (IU 786)
take no ko
bamboo GEN child
'bamboo shoots'

Type 3: *hodo* NMCs. These are relatively rare (only 4 occurred in the corpus: 3 produced by NNSs, 1 by a NJS). While *hodo* 'degree, extent' could be thought of as a *keishiki meishi*—or 'formal noun', and thus a 'light' head noun, as discussed below—it differs from other such light heads in that it can be modified by an immediately preceding noun, without the intervening *no* genitive particle required for other types of noun-noun modification.

The following use of a "*hodo*" NMC is the one instance in my data produced by a non-native speaker.

(28) 7-JE NNS (IU 194)
yama hodo i-ru kara.
mountain extent exist.animate-NPST because
'because there are tons of them [referring to high school students].'
(lit. 'because there's a mountain of them.')

Type 4: attrib.adj NMCs. These are simple modifying constructions in which an attributive adjective modifies a noun. These take two separate forms depending on the word class of

the adjective: the so-called "short form" *i*-adjectives, identical to predicative *i*-adjectives, can directly precede a noun to modify it, as noted above, while *na*-adjectives, often called "noun-like" or nominal adjectives, require the morpheme *-na* to appear in between the attributive adjective and the noun that it modifies.[16] (In (30), *suki-na* is in fact a noun-like *na*-adjective, although semantically it resembles the verb 'to like' in English.)

(*i*-adjective: *chikai*)

(29) 19-JC NJS *chikai* *tokoro ...*
(IU 381) nearby place
'(a) nearby place …'

(*na*-adjective: *suki-na*)

(30) 16-JE NJS *ichiban* *suki-na* *nihonshoku-wa,*
(IU 760) number.one like-ATTRIB Japanese.food-TOP
'the Japanese food (you) most like is,' [lit. '(your) most-liked Japanese food']

Type 5: *onaji* NMCs. These have an appositional structure similar to attributive adjective NMCs, but are all cases of head nouns being modified by the noun *onaji* 'same'. The noun *onaji* forms its own unique NMC in that it can appear directly before the head noun it modifies, whereas other nouns must be used in the *no* (genitive) construction in order to modify a head noun. Interestingly, of the 16 cases of *onaji* being used attributively (rather than as a predicate) in this corpus, 15 of 16 were uttered by non-native speakers, as in both of the following examples; I will return to this point below.

[16] In fact, the status of the *na*-adjective word class as true adjectives has proven controversial since *na*-adjectives sometimes share more behavioral characteristics with Japanese nouns than with *i*-adjectives. (Analogously, *i*-adjectives share many morphosyntactic behaviors with Japanese verbs.) However, for the purposes of the present study, I will treat both *i*- and *na*-adjectives as a unified word class of adjectives—with their constructions taking slightly different forms—both for simplicity and because (1) the two word classes are often taught together in an "adjective" unit in beginning Japanese courses and textbooks (see the *Genki* textbook series, Banno et al. 2011), and (2) Japanese noun-modification has been viewed as a continuum, ranging from nominal to adjectival to clausal modification (Teramura 1980, Kato 2003, Ozeki & Shirai 2010).

(31) 19-JC NNS *onaji kyoushitsu jana-katta-n desu,*
(IU 687) same classroom COP.NEG-PST-IUFP COP.NPST.POL
'(it) wasn't the same classroom,'

(32) 11-JE NNS *sore to onaji purojekuto da yo ne.*
(IU 276) that and same project COP.NPST IUFP IUFP
'(it)'s the same project as that one, you know.'

Type 6: *_ono* NMCs. These are nominals modified with one of three demonstratives: *kono* 'DEM.PROX', *sono* 'DEM.MED', or *ano* 'DEM.DIST'. These demonstratives tend to be used anaphorically. They directly precede the noun they modify, and are similar to *this* and *that* in English.

(33) 1-JC NJS *demo sono kareshi wakarete-shimatte,*
(IU 951) but DEM.MED boyfriend break.up-regrettably
'but (she and) that boyfriend broke up,'

(34) 8-JE NJS *youkan-wa kono %rekutanguru no yatsu de,*
(IU 411) youkan-TOP DEM.PROX rectangle GEN thing COP.NPST
'*youkan* [a Japanese dessert] are these rectangular things,'

Type 7: *_nna* NMCs. These are modifying constructions featuring a specific type of *na*-adjective, formed based on the three demonstratives, *kono* 'DEM.PROX', *sono* 'DEM.MED', or *ano* 'DEM.DIST'. While the demonstrative *sono* 'DEM.MED' precedes a noun it modifies and functions to refer to a specific referent, e.g., *sono hito* 'that person', the analogous *_nna* type of NMC is an adjectival version of the demonstrative, yielding *sonna hito* 'a person like that; that kind of person'. Thus, these three types are *konna* 'this kind of', *sonna* 'that kind of', and *anna* 'that kind of'. These modifiers directly precede the noun

they modify, and are often—but not exclusively—used with a negative or derisive connotation.

(35) 2-JK NJS *sonna* *koto* *nai.*
(IU 577) that.kind.of thing exist.NEG
'that's not true.' (lit. 'that kind of thing's not the case.')

(36) 18-JK NJS *kibidango* *tte* *konna* *aji* *ka,*
(IU 197) kibidango QUOT/TOP this.kind.of flavor Q
'*kibidango* [a Japanese sweet] taste like this huh,'

Type 8: verbal-predicate GNMCCs (hereafter 'verbal GNMCCs/NMCs', or simply 'GNMCCs'). As described above in section 4.1.1, these have the structure of an entire verbal-predicate clause (often consisting solely of the verb in Japanese) used to modify a noun. (Note that the attributive adjective type could also be considered a case of an entire clause—with an adjectival predicate—being used to modify a noun, since adjectival-predicate clauses often consist solely of the adjective in Japanese; nevertheless, these were separately classified, as Type 4 above.) The head noun of verbal GNMCCs always bears some semantic and/or pragmatic relation to the verbal-predicate clause. The construction nevertheless allows for Japanese speakers to produce a particularly wide array of GNMCCs whose head noun referents range from core arguments (S, A, O) of the verbal-predicate clause to the topic or an oblique of the verbal-predicate clause. Moreover, the referents of Japanese GNMCC head nouns bear only a pragmatic relation to the clause, which must be inferred from real-world contextual knowledge (e.g., Matsumoto 1988) in order to be interpreted correctly.

In the following examples, the modifying verbal-predicate clause, which could also be grammatical as a stand-alone clause, appears in brackets, just prior to the head noun being modified. One or more possible interpretations of the relationship of the head noun to the modifying clause is given in parentheses prior to each example:

(head noun is the S argument of the modifying clause)

(37) 1-JC NJS [*yoku tabe-ru*] *hito.*
(IU 169) well eat-NPST person
'someone who eats a lot.' (lit. 'a person who eats well.')

(head noun is the A argument of the modifying clause)

(38) 25-JE NJS [*sore-o benkyou shite-i-ru*] *hito.*
(IU 763) that-ACC study do-PROG-NPST person
'someone who's studying that.'

(head noun could be either the O argument of the modifying clause or an Oblique)

(39) 25-JE NJS [*jibun-de benkyou suru*] *bunya dakara.*
(IU 1175) self-OBL study do.NPST field COP.NPST-because
'because it's the field that I study'
('because it's (in) my own field of study.')

(head noun could be the O or the S[17] argument of the modifying clause)

(40) 18-JK NJS [*nanika yomi-tai*] *hon at-tara,*
(IU 380) something read-DES book exist-COND
'if there's some book that (you) want to read,'

(head noun could have Oblique or pragmatic relationship to the modifying clause)

(41) 16-JE NJS [*kuriimu-ga notte-i-ru*] *yatsu?*
(IU 523) cream-NOM place.on-PROG-NPST thing
'the kind with cream on top?'

(head noun has a pragmatic relationship to the modifying clause)

[17] It might seem that *hon* 'book' could only be analyzed as the O argument of the verb *yomi-tai* (read-DES) 'want to read'. However, Japanese verbs that take desiderative morphology (the suffix *-tai*) do not always have the same argument structure as their non-desiderative counterparts. (In fact, they could be viewed as similar to predicative *i*-adjectives.) Desiderative verbs can also be used in such a way that they take a single S-argument, marked with the nominative case-marker *ga*. The corresponding desiderative structure in this case would be *ano hon-ga yomitai* (that book-NOM read-DES) 'that is the book that I want to read'.

(42) 2-JK NJS *watashi* [*ichi-jikan* *inai-ni* *owar-ase-ru*]
(IU 521) 1 one-hour within-OBL finish-CAUS-NPST

jishin-ga *ar-u* *kara.*
confidence-NOM exist-NPST because

'Because I am confident (I can) have (it) end within an hour.'
(lit. 'Because I have the confidence that (I can) have (it) end within an hour')

Type 9: *iu* GNMCCs. These are a specific sub-type of verbal GNMCCs: clauses whose predicate verb is *iu* 'to say; to be called'. These are treated separately from all other verbal GNMCCs based on the fact that the construction, *to iu* 'QUOT say', has grammaticalized as a complementizer, derived from the quotative construction (e.g., Terakura 1983, Maynard 1992, 1993). The *to iu* construction functions to foreground the information in the modifying clause, which explains or represents the head noun and has thus been called an "explanatory clause" (Maynard 1992, 1993). In this and similar constructions, *iu* 'to say; to be called' has grammaticalized for use in noun-modifying constructions even where no quotative semantic aspect exists. For example, when paired with anaphoric deictic adverbs such as *kou* 'in this way' or *sou* 'in that way; so', the *iu* construction can be used to modify a noun, e.g., *kou iu* + NOUN 'a NOUN like this'; *sou iu* + NOUN 'a NOUN like that'. Like verbal GNMCCs, many different types of clause-to-head noun relationships are possible with *iu* GNMCCs.

(43) 18-JK NJS *sou* *iu* *no* *mo* *samishii* *ya,*
(IU 389) that say one/thing also lonely IUFP
'that kind of thing (situation) would be lonely, too.'

(44) 16-JE NJS *zettai* *koohii* *nom-anai* *to* *ikenai* *to* *iu* *hito-ga.*
(IU 256) definitely coffee drink-NEG COND bad QUOT say people-NOM

i-ru *jana-i [jan]?*
exist.animate-NPST COP.NEG-NPST
'there are people who definitely need to drink coffee, aren't there?

Note that in example (44), the speaker is not quoting anyone as saying *zettai koohii nomanai to ikenai* '(I) definitely need to drink coffee', but rather is claiming that people *who definitely need coffee* exist.

Type 10: *tte* GNMCCs. These are a specific type of *iu* GNMCCs. The particle *tte*, like the particle *to*, is a quotative marker in Japanese. Whereas "*tte iu*" constructions are a variation of the "*to iu*" complementizer mentioned above, and would thus be classified as examples of *iu* GNMCCs in my coding system, *tte* constructions have further grammaticalized, so that only the quotative marker *tte* is produced to fill the function of *tte iu*. (Note that *tte iu* (or *to iu*) would also be grammatically possible, instead of just *tte*, in these cases, but there may be some subtle discourse differences in their usage, which are beyond the scope of this study.) The following are some examples of this tenth, and final, type of NMC:

(45)	8-JE NJS	*hourensou*	*betsu-ni*	*ok-u*	*tte*	*koto?*
	(IU 315)	spinach	separate-OBL	put-NPST	QUOT	thing
		'(you mean) put the spinach in separately?'				
(46)	16-JE NJS	*hontou-ni*	*Edo-chan*	*tte*	*kanji-ga*	*suru.*
	(IU 952)	really-OBL	PN	QUOT	feeling-NOM	do.NPST
		'(that) really seems like Edo-chan'				
		(lit. '(that) really feels like something that Edo-chan (would do)')				

The 10 types of NMCs just introduced are not used mutually exclusively; two or more NMCs can be used in combination to modify the same noun (i.e., some nominals serve as the head nouns for more than one noun-modifying construction within the same

clause). Thus, the head noun might be modified by more than one of the 10 types of NMC, as in the following examples, where the head nouns are bolded:

(same head noun modified by *_ono* type and *verbal* type)

(47) 18-JK NJS *sono* [*rebaizu* *sarete-it-ta*] ***kekka,***
(IU 627) DEM revise do.PASS-PROG-PST result
'those results of (it) having been revised,'

(same head noun modified by *iu* type and *no* type)

(48) 10-JE NJS *sou* *iu* *baka* *no* ***koto*** *shi-nai-n* *desu.*
(IU 308) that say stupid GEN thing do-NEG-IUFP COP.NPST.POL
'[people in England] don't do that kind of stupid thing.'

These cases (where a single noun was modified by more than one NMC structure) were each coded individually and counted as separate NMCs, despite occurring in the same clause.

4.3.2. Coding for Semantic Types of NMC Head Nouns

In addition to coding the NMCs according to their structural types, the semantics of the modified head nouns were also taken into account. As noted above, although I agree with Takara (2012) that the weight of head nouns is ideally viewed along a continuum, for the purposes of this analysis, I coded head nouns into discrete categories of 'light' or 'lexical', and also created an intermediate 'generic' category. Head nouns were thus coded into three main types:

Type 1: Light heads. These are head nouns that convey no specific information about what kind of real-world referent they refer to, carry very abstract meanings, or can be used in

fixed, grammaticalized expressions. Some examples are *koto* 'thing, stuff, matter, one', *mono* 'thing, one', *no* 'thing, one', *yatsu* 'thing', *hou* 'direction, *bu* 'part', *you* 'way', *ten* 'point', *tsumori* 'intention', *tame* 'purpose, sake', and *fuu* 'manner, style'.

In the following examples, the light head nouns are bolded in the top line. In examples (51) and (52) the light heads *hou* and *koto* are used in fixed grammatical expressions, which is often the case with light head nouns. In (51), *hou* 'direction' is used in the fixed expression [___] *hou-ga ii* 'it's better to [do something], [something] is better'. In (52), *koto* 'thing' is used in the fixed expression verb-PAST.TENSE + *koto* + exist 'have/haven't done something, have/haven't had the experience of having done something'.

(The NJS is explaining what *fukuro raamen* (lit. 'bag ramen') is.)

(49) 2-JK NJS (IU 690)

fukuro-ni	*hai-ta*	***yatsu***.
bag-OBL	enter-PST	thing

'the kind (that comes) inside a bag.'

(The speakers are discussing their chemistry class.)

(50) 11-JE NJS (IU 138)

kongoubutsu	*tsukur-u*	***tame,***
mixture	make-NPST	purpose

'in order to make a mixture [in chemistry class],'

(The speakers are discussing how much their teacher expects them to post on a course discussion board.)

(51) 11-JE NJS (IU 562)

ni-ko	*gurai*	*dashi-ta*	***hou**-ga*	*ii*	*yo*	*ne.*
2-CL	around	submit-PST	direction-NOM	good.NPST	IUFP	IUFP

'(we) should probably submit around two (posts).'

(The speakers have been talking about Ouija Boards when the NJS asks the NNS if she has ever used one.)

(52) 10-JE NJS (IU 189)

a	*demo*	*yat-ta*	***koto***	*nai*	*no?*
DM	but	do-PST	thing	exist.NEG	IUFP

'oh but you've never done it?'

Some light head nouns have been described as *keishiki meishi* 'formal nouns' (Masuoka & Takubo 1992, Martin 2004, Takara 2012), which have "little or no semantic content in themselves, and are thus always modified by another word or clause" (Iwasaki 2002: 36). Despite the fact that they cannot occur as independent noun forms, following Takara (2012: 38-39), I nevertheless include formal nouns among the NMC head nouns examined in my study as long as they meet the criterion of being replaceable by a noun with a more specific meaning. I therefore include some 'formal nouns', coded either as light heads, e.g., *koto* 'thing, stuff, matter, one', *no* 'thing, one', or as generic heads, e.g., *tokoro* 'place', *hito* 'person', as explained below.

Note that for some NMCs that modify the light head noun *no* 'one, thing', the head noun *no* has a nominalizing function, as in the following example.

(The speakers are talking about methods of teaching conversation to L2 learners.)
[1-JC NJS (IU 237)]

(53) 1 *meccha* *muzukashi-i,*
very difficult-NPST
'it's very difficult,'

2 *kangae-ru* ***no*** *wa.*
think-NPST NMLZ TOP
'thinking [of ways to do it].' [i.e., the thinking, versus the teaching]

Type 2: Generic heads. The generic category was applied to head nouns with some limited amount of semantic information, at the very least specifying their type of referent, compared to semantically empty light nouns. For example, whereas the light nouns *mono* 'thing, one', *yatsu* 'thing', *no* 'thing, one', and *koto* 'thing, stuff, matter, one' are all unspecified for type of referent, the generic nouns *tokoro* 'place', *hito* 'person', and *jiki* 'time period' are all slightly more specific, while still at the highest possible taxonomic

level for their type of referent. (For example, I coded *hito* 'person' and *ko* 'kid', which are unspecified for gender or number, as generic head nouns; in contrast, I coded *hitobito* 'people', *hitotachi* 'people', *sensei* 'teacher', *obaachan* 'grandma', *hitori* 'one.person', and *futari* 'two.people' as lexical head nouns.[18])

In the following examples, the generic head nouns are bolded in the top line.

(the native speaker has just said that there are three types of people with respect to how they handle Langacker-style thematic diagrams in their academic writing)

(54)	18-JK NJS	*kak-u*	*tsumori-ga*	*nai*	***hito*** *to,*
	(IU 539)	write-NPST	intention-NOM	exist.NEG.NPST	people and
		'there are people who have no intention of drawing (them) and,'			

(The speakers are talking about good restaurants for waffles in Seoul, and how some of the ones on a particular street don't have very good waffles.)

(55)	2-JK NJS	*oishi-i*	***tokoro*** *mo*		*a-ru*	*deshou.*
	(IU 329)	delicious-NPST	place	also	exist-NPST	COP.IUFP
		'there are delicious places, too.' [restaurants with delicious waffles]				

Additionally, head nouns that require some previous referent or conversational context, such as *bubun* 'section/part', were coded as generic, because when these nouns are used, the listener usually already has a referent in mind,[19] e.g., for a section/part *of what*.

Type 3: Lexical heads. Proper nouns and other specific, often highly referential, nouns were coded as lexical head nouns (sometimes referred to as 'heavy' head nouns). In

[18] I also tried to capture the culturally-specific generic nature of certain nouns; for example, I coded *mise* 'store, shop, restaurant, establishment' as a generic head noun, but *resutoran* 'restaurant' as a lexical head noun (although *mise* only occurred as an NMC head noun nine times in the corpus, produced four times by NJSs and five times by NNSs).

[19] Following this reasoning, when speakers used head nouns such as *are* 'DEM.DIST (that)' and *nani* 'what' to stand in for more specific nouns that they could not think of or produce in the moment, these nouns were also coded as generic, since they usually have a previously mentioned discourse referent, and therefore refer to a specific type of thing, assumed to be activated in the listener's mind. (The demonstrative *are* only occurs as a head noun three times in the corpus, produced twice by NJSs and once by a NNS; the word *nani* only occurs as a head noun once, produced by a NJS.)

addition to the examples of lexical nouns, like *hitobito* 'people', *sensei* 'teacher', and *hitori* 'one.person', given above, the following are all examples of lexical head nouns as well: *boshuu* 'recruitment', *kazoku* 'family', *gakkou* 'school', *raamen* 'ramen', *ie* 'home', *funiki* 'atmosphere', *kao* 'face', *chuukai* 'agent, agency', *houhou* 'method, technique', *haha* 'mom', *baito* 'part-time job'.

In the following examples, the lexical head nouns are bolded in the top line.

(The native speaker is talking about who was at a wedding he recently attended.)

(56) 7-JE NJS (IU 298)

mukashi-kara	*no*	*kyoutsuu*	*no*	***tomodachi***	*mitai*
former-from	GEN	mutual	GEN	friends	seeming

no-ga	*kekkou*	*ite,*
ones-NOM	fairly	exist.animate

'there were a fair number of people who seemed like old mutual friends.'

(The speakers are talking about what to have for dessert.)

(57) 8-JE NJS (IU 465)

ie-ni	*a-ru*	***okashi***	*mo*	*tabe-nai*	*to*	*ne.*
house-OBL	exist-NPST	sweets	also	eat-NEG.NPST	COND	IUFP

'we have to eat the sweets that are in the house, too.'

Excluded Type: Adverbials. In addition to the lexical, generic, and light categories, there was a fourth category of NMC head nouns. In fact, this category represented a separate functional type of NMCs: adverbial phrases. According to Takara (2012), some constructions with specific light or generic heads actually function as adverbial clauses; the head nouns in these constructions never have a referent in the previous context (2012: 53). Takara argues that these head nouns of NMCs have been reanalyzed and are now "relatively fixed as adverbial clauses or specific expressions" (2012: 64). He explains that when such head nouns appear in NMCs, the construction as a whole functions as an adverbial phrase that modifies a main clause, for example, as a temporal clause, a reason

clause, or a concessive clause (Takara 2012: 65; see also Iwasaki 2002: 37). Included as adverbial head nouns are (most uses of) words like *toki* 'time', *koro* 'period', *aida* 'space, gap', *uchi* 'inside', *mae* 'front, before', and *chokugo* 'immediately after'.

In the following examples, the head nouns of the adverbial clauses are bolded in the top line.

(The speakers are talking about their grade school experiences.)

(58) 10-JE NJS *shougakkou* *no* ***koro***.
(IU 194) elementary.school GEN period
'when (I was in) elementary school.'

(The speakers are talking about when they drink tea versus coffee.)

(59) 16-JE NJS *nanka* *gohan* *tabe-ta* ***ato***-*ni,*
(IU 254) like rice[food] eat-PST after-OBL
'like after eating a meal,'

(The speakers are planning for having their first child.)

(60) 8-JE NJS *tabun* *sono* *nyuuin* *shite-i-ru* ***aida***-*ni,*
(IU 779) maybe that hospitalization do-PROG-NPST span-OBL
'maybe during that period when (I'm) in the hospital,'

I also coded head nouns such as *ue* 'above, on', *naka* 'middle, inside', *mannaka* 'center', *zengo* 'before.and.after', etc. as adverbial. I additionally categorized as adverbial the NMC heads *chikaku* 'nearby', as in *Fuji-san no chikaku* 'near Mt. Fuji', and *tsugi* 'next', as in *sono tsugi* 'after that'. I then excluded NMCs that functioned as adverbials from the data set examined in the quantitative analyses that follow in this chapter.

Excluded Type: NMCs with unrealized head nouns. Unlike all of the examples presented thus far, some NMCs have unrealized head nouns; that is, a pre-nominal noun-modifying construction is uttered, but the head noun at the end is left to be inferred from context. This usually occurs with the *no* (GEN) type of NMC, and can be perfectly grammatical (e.g.,

these structures are taught in introductory Japanese textbooks). The *no* in such cases can play an additional function[20], similar to that of a light head noun, meaning 'one', with its referent understood from prior discourse context, as in the following example:

(The speakers are talking about how to prepare for the birth of their first child.)
[8-JE NJS (IU 899)]

(61) 1 *senzai mo kae-ta hou-ga ii kamo ne.*
detergent also change-PST direction-NOM good maybe IUFP
'we should also probably change our detergent'.

2 *sentaku no.*
laundry GEN
'laundry [detergent].'

In other instances, the grammaticality of NMCs with unrealized head nouns may be more debatable; however, they still occur in conversational discourse, presumably where the modified referent is inferable from discourse context. The following are two such examples.

(The NJS has just complimented the NNS's intonation in Japanese.)

(62) 24-JE NJS (IU 1037) *kekkou nihongo no furatto-na?*
fairly Japanese GEN flat-ATTRIB
'Japanese's fairly flat [intonation]?'

(Both speakers have been discussing an experiment in chemistry class.)

(63) 11-JE NJS (IU 67) *futsuu-ni sonna ga atte-i-ru?*
usual-OBL that.kind.of NOM be.correct-PROG-NPST
'Are those kinds of [amounts of chemicals] usually correct?'

[20] In some cases, it may be difficult or impossible to distinguish between the use of a genitive particle *no* NMC without a realized head noun versus a NMC that modifies the 'light' head noun, *no* 'one, thing'. However, head nouns, whether heavy or light, can only directly follow finite verbs or adjectives in Japanese; they cannot directly follow nouns without an intervening *no* (GEN) particle: this is therefore evidence that such constructions (where *no* directly follows a noun) are instances of *no* (GEN) without a head noun, rather than of a modified 'light' head noun, *no* 'one, thing'. Nevertheless the *no* (GEN) here plays the additional role of meaning 'one'; this use is taught in Japanese language courses by introducing contrasting constructions such as: *watashi no hon desu* 'it's my book' versus *watashi no desu* 'it's mine'.

In any case—along with adverbial NMCs—all instances of NMCs with unexpressed head nouns were excluded from the sample in the quantitative analyses that follow.

4.3.3. Coding for Previous Referents of Head Nouns

Similar to the function of relative clauses in English, Japanese GNMCCs and NMCs in general can be said to have the function of restricting the set of entities or specifying the content denoted by a head noun (e.g., Comrie & Horie 1995). Through restricting or specifying, the modifying clause makes its head noun more identifiable to the listener, while also presenting the referent as relevant for the listener at that point in the conversation (by relating it to a given referent), a function of English relative clauses that has been identified by Fox and Thompson (1990). It is therefore no surprise that NMCs in Japanese often function to introduce new referents into the discourse. In other words, we could expect the majority of conversational NMCs to modify head nouns that have no previously mentioned referent in the prior discourse, indicating that they are being used to introduce new referents rather than to modify given referents. (Another reason we would expect many NMC head nouns to lack previously mentioned discourse referents is that many such NMCs function as adverbial clauses, as discussed above.)

I coded each NMC head noun for whether its referent had been previously mentioned, defining a previous mention as an overt mention (whether using the same nominal expression or not), within the previous 10 clauses.

In the following examples, the NMC head nouns are bolded in the top line. Examples (64) and (65) each contain a new referent (a head noun with no previously mentioned referent).

Head nouns with new referents:

(The speakers are talking about business/restaurant turnover in a particular building.)

(64) 7-JE NJS *kii-ta* ***hanashi*** *de-wa,*
(IU 457) listen-PST talk OBL-TOP
'from what (I)'ve heard,' (lit. 'in talk (I)'ve heard,')

(The speakers are wondering how their professor possibly could have come up with a good, relevant question after apparently sleeping through a presentation.)

(65) 18-JK NJS *saki-ni* *itte-i-ta* ***kanousei****-ga* *a-ru* *yo* *na,*
(IU 975) prior-OBL say-PROG-PST possibility-NOM exist-NPST IUFP IUFP
'it's possible that (someone) told (him about it) beforehand.'

Example (66) below contains three instances of light head nouns—each of which has a previously mentioned referent (lines 2, 6, and 7). The previous mention before line 2 occurred 5 IUs prior; this example is presented to illustrate the use of the NMCs with light heads in lines 6 and 7 that refer back to *youkan*, which is previously mentioned as a light head in line 2 and as a lexical noun in line 3.

Head nouns with previously mentioned referents:

(The speakers have been talking about how to characterize the Japanese dessert *youkan* for the past 52 intonation units, since the NJS mentioned that they have *youkan* in the house.)

[8-JE (IU 421)]

(66) 1 NJS *niko,*
2-CL
'two (small things),'

2 NNS *de* *%two* *%stick-de* *kir-u* ***yatsu****?*
and two stick-OBL cut-NPST thing
'the kind (one) cuts into two sticks?'

3 NJS *fuutsuu no youkan-wa na,*
regular GEN youkan-TOP IUFP
'regular *youkan* is (like that),'

4 NNS *hai hai,*
yeah yeah
'yeah yeah,'

5 NNS *omoidashi-ta*
remember-PST
'(I) remembered,'

6 NJS *ie-ni a-ru **no**-wa,*
house-OBL exist-NPST thing-TOP
'the ones (we have) in the house are,'

7 NJS *kou indibijuaru-ni waker-arete-i-ru **yatsu** yanen kedo.*
uh individual-OBL separate-PASS-PROG-NPST thing IUFP but
'…the kind that are (pre-)divided up individually though.'

I excluded all lexicalized NMCs, such as *otoko no ko* 'boy', or *Nemuri no Mori no Bijo* 'Sleeping Beauty', from this coding for previously mentioned referents of head nouns, since the entire NMC itself could be said to function as a simple nominal expression rather than a modifier plus head noun.

4.4. Overview of NMC Frequency

Table 4.1 gives the token counts and relative frequencies of 8 of the 10 types of NMCs in the corpus, roughly ordered from most to least frequent. The two types that have been excluded here are *hodo* 'extent' (which was used only 4 times, 3 times by NJSs), and *onaji* 'same' (which was used only 16 times, 15 by NNSs). Both the *hodo* and *onaji* types occur in unique constructions, not easily grouped with other NMCs based on structural similarities, and both are relatively infrequent as well.

The analyses in the sections that follow focus on the three NMC types in bold face enclosed by the double-line box.

	no **(GEN)**	**verbal**	**attrib. adj.**	*_ono* (DEM)	*_nna*	*iu*	*tte*	lex.	total
NJSs	373 *(35%)*	251 *(23%)*	151 *(14%)*	116 *(11%)*	44 *(4%)*	111 *(10%)*	11 *(1%)*	18 *(2%)*	1075 *(100%)*
NNSs	411 *(44%)*	178 *(19%)*	97 *(10%)*	144 *(15%)*	14 *(1%)*	76 *(8%)*	3 *(0%)*	14 *(1%)*	937 *(100%)*

Table 4.1 Overview of NMC types.[21]

As illustrated by Table 4.1, the distributions of NMC types produced by NNSs and NJSs are fairly similar to each other. Considering the total number of IUs produced by each group of speakers, the NNSs produced slightly fewer NMCs compared to the NJSs, per

[21] In addition to all *hodo* and *onaji* type NMCs, two other single tokens have also been excluded from Table 4.1: 1) one instance of a NNS incorrectly using both an *i*-adjective and the *no* genitive particle in combination with each other to modify a head noun, and 2) one instance of a NJS producing an "*iu*" GNMCC, but with the particle *gurai* 'about, around' inserted in between the *tte iu* complementizer and the modified head noun.

amount of talk.[22] The main difference between NNS and NJS noun-modifying constructions is that a higher percentage of the learners' NMCs are *no* (and *_ono*) types, while they use a lower percentage of all other types of NMCs, compared to NJSs.

Whereas some NMCs function to specify or restrict the set of possible referents of the head noun, the NMCs involving deixis of some kind (*_ono* and *_nna* types, based on demonstratives) are often anaphoric, referring back to a specific referent or situation previously mentioned in the discourse.[23] The same could be said of *iu* and *tte* types, as in NMCs like *kou iu* + NOUN 'this kind of NOUN' or *sou iu* + NOUN 'that kind of NOUN'.

Of the 8 NMC types identified in Table 4.1, only three consistently play the same modifying role of specifying and restricting the head noun: the *no* genitive type, the verbal GNMCC type, and the attributive adjective type (enclosed by the double-line box); these three types are also the most frequent NMC types among NJSs (see Table 4.1) and they are the focus of the analyses that follow.

4.5. NMC Analysis: Statistical Methods

In the next sections, I present statistical analyses of the distributions of NMC structural types and head noun types produced by the NNSs compared to the native speakers. Before proceeding to the analyses, I will give a basic explanation of the statistical methods used below.

---

[22] The NJSs produced 7053 IUs and the NNSs 7286 IUs; therefore 15.24% of the NJSs' IUs contained NMCs, while 12.86% of the NNSs' IUs contained them.

[23] The proximal deictics *kono* and *konna* may not always be used anaphorically but always refer to 'given' rather than 'new' referents, whether previously mentioned in the discourse or visually present during the conversation.

For both the NMC structural types and the NMC head noun types, I will first present an overview of the distributions of types produced by the NJSs and the NNSs as a group, followed by an expanded table of their descriptive frequencies, in which the individual NNSs are ranked according to their Kullback-Leibler divergence, a metric that assesses the difference between two probability distributions: the greater the value, the more a NNS's pattern diverges from the NJSs' pattern. In order to assess how different each NNS's distribution of NMC types compared to the NJS distribution of NMC types, I calculated the Kullback-Leibler divergence of each NNS's distribution from the NJS distribution.

Note that the Kullback-Leibler divergence is non-symmetric; it examines only the divergence of each NNS from the NJSs, not the divergence of the NJSs from any NNSs. This makes it ideally suited to the present purposes, since the L2 learners' approximation of native speaker-like speech is presumably their ultimate goal; likewise the goal of this research is to investigate the ways in which NNS speech differs from NJS speech, and not the other way around.

Following the examination of the NNSs' Kullback-Leibler divergence rankings, I additionally investigated the role of each NNS's native speaker interlocutor by contrasting each NNS's use of NMC structural types or head noun types with that of the individual NJS from his or her recording. I did this by calculating a "Difference Value" for each pair of speakers: I took the absolute values of the differences between each pair of speakers' percentages of each type of NMC, and added them together. For example, for NMC structural types, the Difference Value was the summed total of the following three numbers: 1) the difference between the NNS's and the NJS's percentages of *no* (genitive)

NMCs, 2) the difference between their percentages of verbal NMCs, and 3) the difference between their percentages of attributive adjective NMCs. This allowed me to rank individual NNSs according to how similar or different their NMC production was compared to that of their individual NJS interlocutors.

I then conducted a separate analysis on the speakers' distributions of NMC head nouns with new versus previously mentioned referents, using a mixed-effects model. Unlike regression models or chi-squared tests, mixed-effects models are able to take into consideration the fact that each speaker contributes multiple data points, by using subject-specific intercepts of predictor variables. This allows the results to be generalized, since it treats the speakers as having been randomly sampled from a larger population. The statistical model selection process considers the effects of the independent variables and of their interactions on the dependent variable; speakers are assigned random intercepts for each of these factors. In this case, the factors included:

- an independent variable: whether the speaker was a NNS or NJS
- an independent variable: the individual speaker I.D.
- the interaction of these two effects

Any factors (independent variables or their interactions) with a p-value of 0.05 or higher (meaning they are not significant) are eliminated from the final model. The final model thus contains only the random effects that make a significant contribution to the model and the fixed effects that are significant predictors of the dependent variable.

Lastly, I compared the distributions of lexical versus light NMC head nouns, using a chi-squared heterogeneity test, which allows for a comparison of isomorphic 2x2 tables to see whether the data sets exhibit statistically different trends.

4.6. Speakers' Distributions of NMC Types

As stated above, the analyses in the rest of this chapter focus on only the three types of NMCs that consistently play the same modifying role of specifying and restricting the head noun: the *no* genitive type, the verbal GNMCC type, and the attributive adjective type. The following table shows the distributions of these three types of NMCs among each group of speakers.

	no (GEN)	verbal	attrib. adj.	total
NJSs	321 *(47%)*	215 *(32%)*	145 *(21%)*	681 *(100%)*
NNSs	369 *(60%)*	155 *(25%)*	94 *(15%)*	618 *(100%)*

Table 4.2. Distributions of specifying/restricting NMC types.

As discussed in section 4.3.2 above, the data in Table 4.2—and all data sets examined below—exclude Adverbial NMCs and NMCs with unrealized head nouns.[24]

Table 4.2 reveals that while the majority of the NMCs produced by both NJSs and NNSs were the *no* genitive type, the *no*-type NMCs represent a much larger proportion of the non-native speakers' NMCs compared to the native speakers. Moreover, NNSs produce proportionally fewer verbal and attributive adjective NMCs compared to NJSs.

Whereas all of the NNSs are conflated into a single row in Table 4.2, the production of these three types of NMCs by individual L2 learners will be explored in more detail in the following section.

[24] Excluded from Table 4.2, and all subsequent tables, are 162 Adverbial NMCs (72 produced by NJSs, 54 by NNSs), and 36 NMCs with unrealized head nouns (22 produced by NJSs, 14 by NNSs).

4.6.1. Distributions of NMC Types: Statistical Analysis

In order to examine the differences among individual NNSs' distributions of NMC types, the descriptive frequencies of their NMC types are given in Table 4.3. The top two rows are the combined groups of speakers, repeated from Table 4.2 above. Each row below that is the distribution of an individual NNS.

The individual NNSs in Table 4.3 are listed in ranked order, according to their Kullback-Leibler divergence (KL-Div). As stated in section 4.5 above, the Kullback-Leibler divergence is a metric that assesses the difference between two probability distributions: in this case, each L2 learner's probability distribution of *no*-type, verbal, or adjectival NMCs is contrasted with the native speakers' collective probability distribution across those three types. (For example, for the NNS in Recording 1, I contrasted her 25-19-9 distribution with the NJSs' 321-215-145 distribution; this yielded a particular Kullback-Leibler divergence value, reflecting how different her distribution was from that of the NJSs.) The greater the KL-Div value, the more a NNS's pattern diverges from the NJSs' pattern; in Table 4.3 the NNSs appear in ranked order, from the smallest KL-Div (most like the NJSs) on top to the largest KL-Div in the bottom row.

Recall that the non-native speakers in Recordings 25 and 26 had by far the least experience living in Japan (less than one year) and studying the language (4 years or less).

	no (GEN)	verbal	attrib. adj.	total	KL-Div
NJS	321 *(47%)*	215 *(32%)*	145 *(21%)*	681 *(100%)*	---
NNSs	369 *(60%)*	155 *(25%)*	94 *(15%)*	618 *(100%)*	---
18-JK	7 *(43.75%)*	6 *(37.5%)*	3 *(18.75%)*	16 *(100%)*	6.301781e-06
8-JE	17 *(46%)*	11 *(30%)*	9 *(24%)*	37 *(100%)*	1.086918e-05
10-JE	29 *(53%)*	15 *(27%)*	11 *(20%)*	55 *(100%)*	5.345923e-05
1-JC	25 *(47%)*	19 *(36%)*	9 *(17%)*	53 *(100%)*	5.481240e-05
2-JK	27 *(52%)*	17 *(33%)*	8 *(15%)*	52 *(100%)*	7.929993e-05
24-JE	16 *(38%)*	15 *(36%)*	11 *(26%)*	42 *(100%)*	8.288805e-05
19-JC	45 *(53.6%)*	24 *(28.6%)*	15 *(17.9%)*	84 *(100%)*	1.493850e-04
16-JE	20 *(62.5%)*	5 *(15.6%)*	7 *(21.9%)*	32 *(100%)*	1.911154e-04
7-JE	30 *(61%)*	13 *(27%)*	6 *(12%)*	49 *(100%)*	2.887555e-04
11-JE	49 *(62%)*	22 *(28%)*	8 *(10%)*	79 *(100%)*	8.668840e-04
26-JE	47 *(78.3%)*	8 *(13.3%)*	5 *(8.3%)*	60 *(100%)*	1.843076e-03
25-JE	57 *(97%)*	0 *(0%)*	2 *(3%)*	59 *(100%)*	4.508322e-03

Table 4.3. NNS distributions of NMC types, ranked by Kullback-Leibler Divergence from NMC types of the summed NJSs.

Table 4.3 shows each non-native speaker's distribution of NMC types compared to that of the native speakers grouped as a whole. The NNSs are listed in order based on a ranking of their KL-Div statistics, revealing which NNSs produced NMC distributions that were more similar to that of the native speakers (near the top), or more different from the native speakers (near the bottom). NNSs in Recordings 18 and 8 had distributions of NMC types that were most similar to native speakers, while NNSs in Recordings 25 and 26 had distributions that differed from native speakers the most. However, as can be seen from the numbers given in scientific notation, all of the KL-Div calculations resulted in very small

values, since on the whole the NNSs were all quite similar to the NJSs in terms of the probability distribution of their construction use.

As could be predicted from Table 4.2 above, compared to native speakers, most NNSs produce about the same, or a slightly larger, proportion of *no*-type NMCs and about the same, or a slightly smaller, proportion of verbal-type and attributive adjective-type NMCs. However, several NNSs have different distributions: most striking are the speakers in Recordings 26 and 25, who produce vastly more *no*-type NMCs than other types, which helps explain why they had the largest KL Divergence values. Indeed, the NNS in Recording 25 produces no verbal NMCs at all, and only two attributive adjective constructions. In addition, the NNS in 24 (who had lived in Japan for 3.5 years) was unique in producing nearly equal amounts of *no*-type and verbal-type NMCs, compared to other NNSs, some of whom (e.g., 10, 7, 11) produced nearly twice as many *no*-type as verbal-type NMCs.

The following is a plot of the KL-Div results from Table 4.3, with the median indicated by the solid vertical line and the median absolute deviation indicated by the dotted vertical lines.

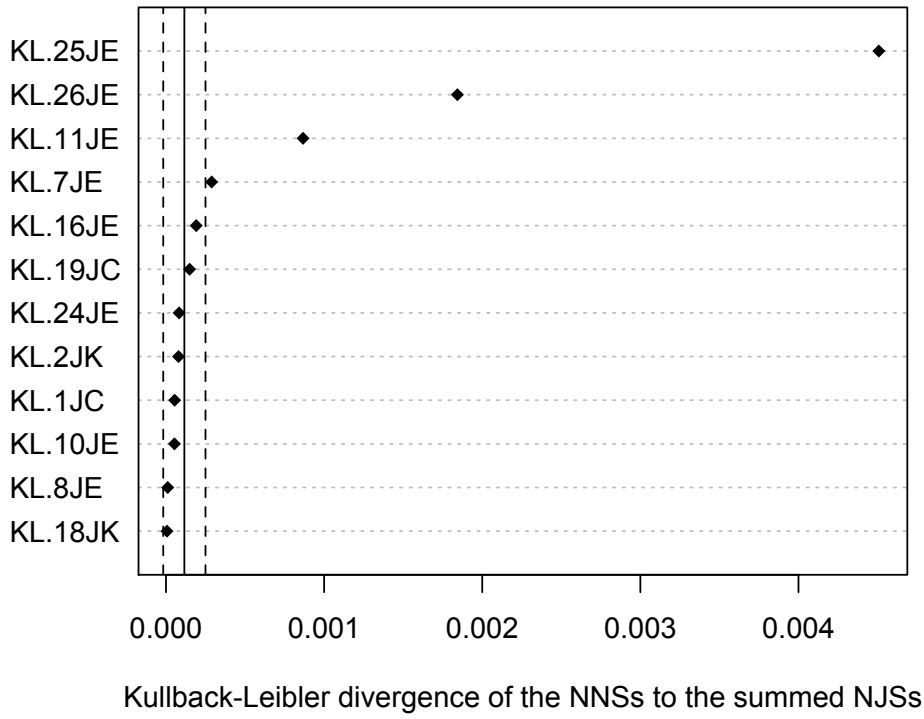

Figure 4.1. Plot of Kullback-Leibler Divergence values of NNSs' construction distribution from NMC types of the summed NJSs.

From the plot in Figure 4.1, it is clear that the least experienced NNSs in Recordings 25 and 26 have a distribution of NMC types that is least similar to a native speaker-like distribution (as was evident from the ranking in Table 4.3 as well). In addition, the NNS in Recording 11 (who has lived in Japan for 14 years) has a somewhat non-native distribution of NMC types. Speakers in Recordings 18 and 8 come the closest to a native speaker-like distribution of construction choices. These speakers have spent 4 and 6 years in Japan, respectively; though they have not been there the longest among the NNSs, they group together with nearly all of the other NNSs in matching the native speakers quite closely.

Lastly, regarding the KL-Div results, in order to assess whether or not NNSs' KL Divergences (of their distributions of NMC types from that of NJSs) were correlated with the raw frequency with which they produced NMCs. These values were plotted against

each other, as seen in Figure 4.2 below, where each scatterplot point is labeled with the recording number of the NNS.

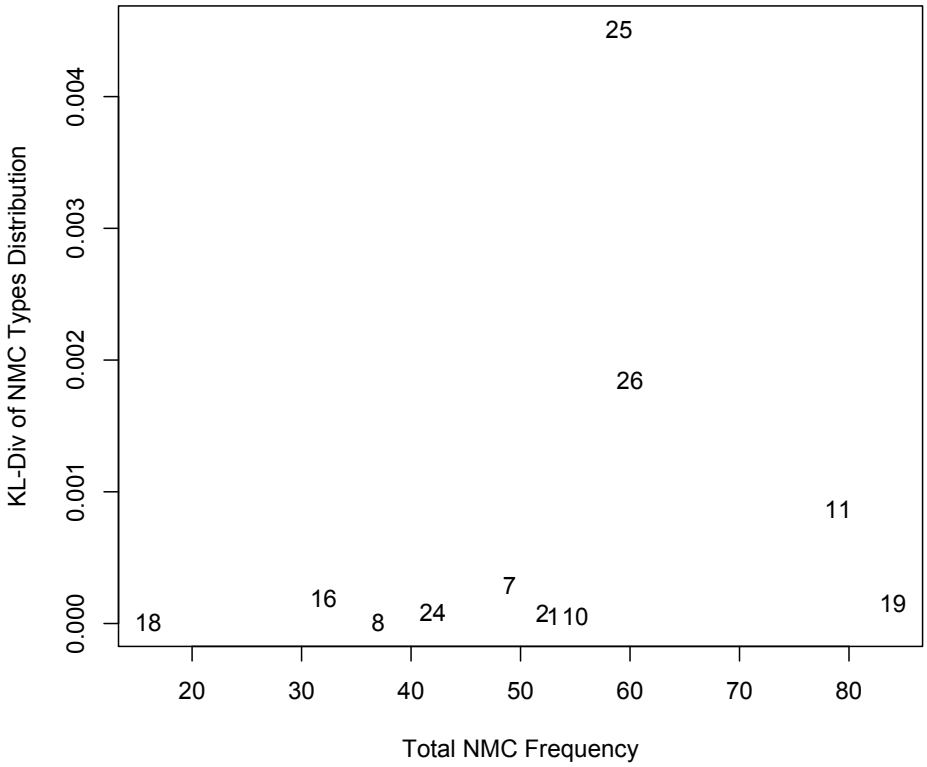

Figure 4.2. Plot of Kullback-Leibler Divergence values of NNSs' NMC Types Distributions, compared to the NNSs' total frequency of NMCs.

Figure 4.2 once again demonstrates the extent to which the NNSs in Recordings 25 and 26 are outliers in terms of their KL Divergence from the NJS distribution. However, the results are not very revealing—it seems there is not a correlation between NMC raw frequency and a native-like distribution: nearly all of the NNSs have very small KL-Div values, indicating how similar their NMC type distributions were to that of the NJSs, regardless of the frequency with which they produced NMCs. While NNSs 25, 26, and 11 show less native-like NMC type distributions here (as in Figure 4.1), there seems to be no consistent overall upward or downward trend of a NNS's frequency of NMCs correlating with their KL-Div; instead, nearly all of the NNSs are clustered horizontally along the

lower part of the plot, indicating that the frequency of learner NMCs is not a factor in how their NMC type distributions compared to that of NJSs.

To further investigate the factors influencing NNSs' use of NMCs in each conversation, I considered the role of each NNS's native speaker interlocutor by calculating a "Difference Value" for each pair of speakers. In this case, the Difference Value involved adding together the absolute values of: 1) the difference between the NNS's and the NJS's percentages of *no* (genitive) NMCs, 2) the difference between their percentages of verbal NMCs, and 3) the difference between their percentages of attributive adjective NMCs. This resulted in a Difference Value metric for each NJS-NNS pair, which indicates how different the two speakers' distributions of various NMC types were from each other.

The following table gives the rank order of the NJS-NNS pairs, from smallest Difference Value (most similar to each other; ranking 1) to largest Difference Value (ranking 12).

Difference Value ranking	NJS-NNS pairs in ranked order	**Difference Value**
1	10-JE	**2.9**
2	2-JK	**13.3**
3	11-JE	**13.38**
4	18-JK	**13.39**
5	19-JC	**15.6**
6	1-JC	**16.8**
7	7-JE	**23.1**
8	8-JE	**29.5**
9	24-JE	**33**
10	16-JE	**57.7**
11	26-JE	**77.4**
12	25-JE	**88.2**

Table 4.4. Difference Values between NNS-NJS pairs for NMC Type distributions.

As can be seen in Table 4.4, the Difference Value rankings reveal that the NNSs in Recordings 25 and 26 produced NMC types with a distribution least similar to that of their specific NJS interlocutors. NNSs in Recordings 11 and 7, who had the next largest KL Divergences (Table 4.3), nevertheless produced NMCs with distributions much more similar to those of their NJS interlocutors. The NNSs in Recordings 10 and 2 (who had lived in Japan for 21 and 3.5 years, respectively), produced distributions most similar to their NJS interlocutors, followed by the speakers in 11 and 18 (who had lived in Japan for 14 and 4 years, respectively). With the exception of the NNS in Recording 11, these findings are for the most part in line with the KL-Div results from above, indicating that, generally speaking, the more a pair of NJS-NNS interlocutors resemble each other individually, the more likely that NNS's patterns of speech are to resemble those of NJSs. This may be a matter of correlation rather than causation, i.e., perhaps the more a NNS has achieved native-like Japanese conversation, the more his or her interlocutor can speak in a natural conversational way, without modifying or accommodating to a NNS of lower L2 ability, whether consciously or not.

4.7. Speakers' Distributions of NMC Head Noun Types

In this section, I examine which semantic types of head nouns the speakers modified using NMCs. Continuing to limit the investigation to only the NMC structural types that share the same specifying and restricting modifying function (i.e., the *no* genitive type, the verbal GNMCC type, and the attributive adjective type), the following table shows the

distributions of lexical, generic, and light head nouns in the NMCs produced by NJSs and NNSs.

	Lexical	Generic	Light	Total
NJSs	335 *(49%)*	143 *(21%)*	203 *(30%)*	681 *(100%)*
NNSs	352 *(57%)*	106 *(17%)*	160 *(26%)*	618 *(100%)*

Table 4.5. Distributions of NMC head noun types.

Table 4.5 shows that both NJSs and NNSs produce a majority of NMCs that modify lexical head nouns. Light head nouns are the next most frequent for both groups, with generic nouns the least frequent.

Note that if generic and light heads were grouped together in a binary heavy-versus-light dichotomy, then the NNSs would still have more heavy, or lexical, head nouns (57% versus 43%), while the NJSs would have a more even distribution of heavy and light (49% versus 51%). These findings for NNS-NJS conversations contrast with the preponderance of light head nouns found by Takara (2012) and Ono & Thompson (2009) for conversational Japanese data among native speakers, as discussed further below. Table 4.5 also shows that NNSs produce a greater proportion of lexical noun-headed NMCs than do NJSs, and smaller proportions of generic and light noun-headed NMCs.

4.7.1. Distributions of NMC Head Noun Types: Statistical Analysis

The following table is an expanded version of Table 4.5, which gives the descriptive frequencies of individual NNSs' NMC head noun types. (The top two rows are the combined groups of speakers, repeated from Table 4.5 above.) Each row below that is the NMC head noun semantic type distribution of an individual NNS. Once again, I used the

Kullback-Leibler divergence in order to statistically assess the individual NNS distributions of NMC head noun types, compared to the NJS distribution. Here the KL-Div was calculated for each NNS, indicating the extent to which that L2 learner's distribution of NMC head noun types diverged from a native speaker-like distribution. The NNSs were then ranked according to their KL-Div values; they are listed in order of this ranking in the table that follows: the NNS with the smallest KL-Div (most like the NJSs) is on top, while the NNS with the largest KL-Div (least like the NJSs) is in the bottom row.

	lexical	generic	light	total	KL-Div
NJSs	335 *(49%)*	143 *(21%)*	203 *(30%)*	681 *(100%)*	---
NNSs	352 *(57%)*	106 *(17%)*	160 *(26%)*	618 *(100%)*	---
18-JK	9 *(56%)*	4 *(25%)*	3 *(19%)*	16 *(100%)*	2.241554e-05
1-JC	25 *(47%)*	14 *(26%)*	14 *(26%)*	53 *(100%)*	6.965307e-05
10-JE	23 *(42%)*	13 *(24%)*	19 *(35%)*	55 *(100%)*	8.820650e-05
7-JE	26 *(53%)*	7 *(14%)*	16 *(33%)*	49 *(100%)*	8.939423e-05
8-JE	22 *(59%)*	4 *(11%)*	11 *(30%)*	37 *(100%)*	1.370501e-04
24-JE	19 *(45%)*	4 *(10%)*	19 *(45%)*	42 *(100%)*	3.542960e-04
16-JE	25 *(78%)*	2 *(6%)*	5 *(16%)*	32 *(100%)*	4.962256e-04
2-JK	17 *(33%)*	9 *(17%)*	26 *(50%)*	52 *(100%)*	7.090422e-04
26-JE	41 *(68%)*	6 *(10%)*	13 *(22%)*	60 *(100%)*	7.321896e-04
11-JE	50 *(63%)*	8 *(10%)*	21 *(27%)*	79 *(100%)*	7.913944e-04
19-JC	42 *(50%)*	30 *(36%)*	12 *(14%)*	84 *(100%)*	1.585653e-03
25-JE	53 *(90%)*	5 *(8%)*	1 *(2%)*	59 *(100%)*	3.109247e-03

Table 4.6. NNS distributions of NMC head noun semantic types, ranked by Kullback-Leibler Divergence from NMC head noun types of the summed NJSs.

The ranking in Table 4.6 shows that NNSs in Recordings 18 and 1 had distributions of NMC head noun types that were most similar to native speakers, while NNSs in Recordings 25 and 19 had distributions that differed from native speakers the most. However, once again all of the KL-Div calculations resulted in very small values, since generally speaking the NNSs all produced NMCs whose head nouns had a very similar probability distribution to those of the NJSs.

Table 4.6 also shows that the speakers in Recordings 25 and 26 once again have a skewed distribution compared to the NJSs, relying most heavily on NMCs that modify lexical nouns. The NNSs in Recordings 11 and 16 (who had been in Japan for 14 and 8 years, respectively) also share this trait. In contrast with the NJSs, the NNS in Recording 2 was the only speaker to produce a greater number of NMCs with light heads than with lexical heads, although the NNS in 24 produced an equal number of each. Additionally, not all of the individual NNSs followed the pattern of the NJSs (and the NNS group as a whole) in producing more light heads compared to generic heads: the speakers in Recordings 18 and 19 (who had lived in Japan for 4 and 8 years, respectively) both produced more NMCs with generic heads than with light heads.

The following is a plot of the KL-Div results from Table 4.6, with the median indicated by the solid vertical line and the median absolute deviation indicated by the dotted vertical lines.

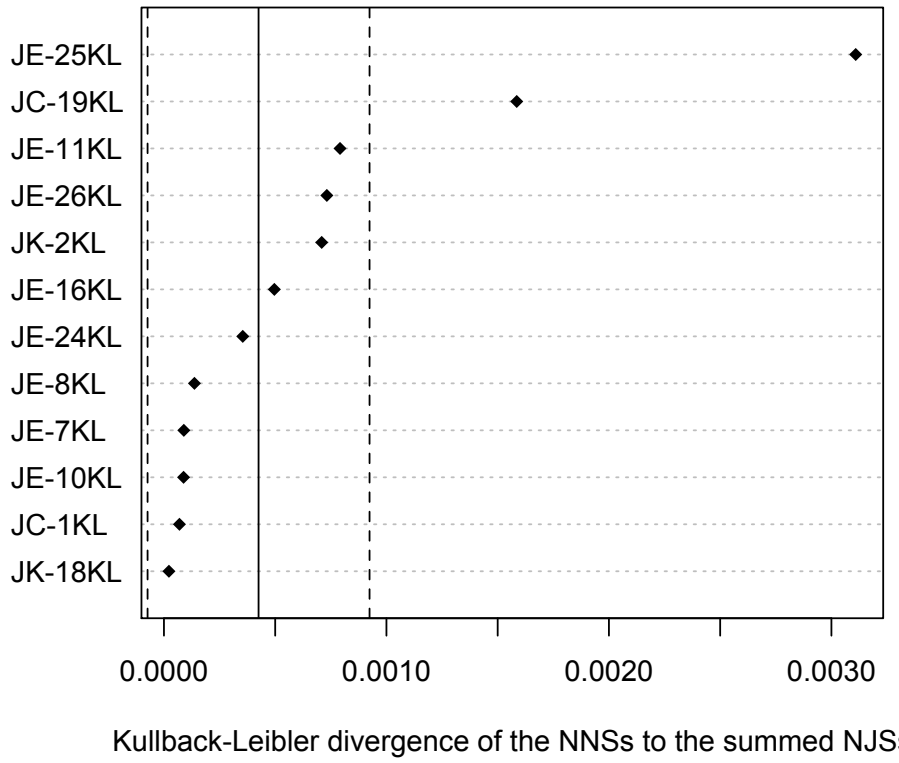

Figure 4.3. Plot of Kullback-Leibler Divergence values of NNSs' NMC head noun type distribution from that of the summed NJSs.

The plot in Figure 4.3 shows that NNSs in Recordings 2, 26, 11, 19, and 25—the last two in particular—all produced NMCs with a non-native distribution of semantic head noun types. Other NNSs produced NMCs with a head noun distribution that more closely resembled that of NJSs; however, there was a much bigger range among the NNSs for head noun types as compared to NMC types (as in Figure 4.1 above). Although it is not surprising to see the speakers from 25 and 26 diverging from NJSs in this way, it was less expected to see that speakers from 19 and 11 (who had lived in Japan for 8 and 14 years, respectively) also diverged from the NJS pattern.

Once again, in order to assess whether or not a NNS's KL Divergence (of their distribution of NMC head noun types from that of NJSs) was correlated with the raw frequency with which they produced NMCs, these two values were plotted against each other (Figure 4.4 below, where each scatterplot point is labeled with the recording number of the NNS).

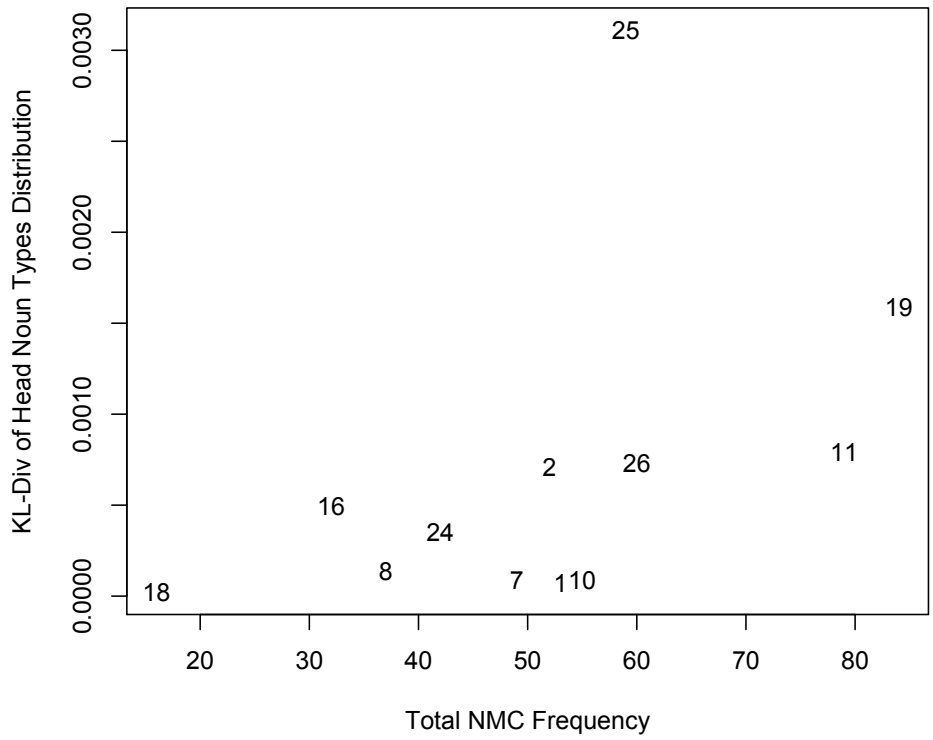

Figure 4.4. Plot of Kullback-Leibler Divergence values of NNSs' NMC Head Noun Types Distributions, compared to the NNSs' total frequency of NMCs.

In contrast to the similar plot of the KL-Div values for NMC structural types versus frequency (Figure 4.2 above)—the results of which were not very revealing—Figure 4.4 shows a slight increasing trend of the NNSs' KL Divergence from the NJS in terms of

distribution of NMC head noun types, as total NMC frequency increases. To assess the significance of this, I calculated Kendall's tau (τ), a statistic that measures the correlation between two quantities. The NMC head noun type distributions and the NNSs' total NMC frequency are significantly correlated with each other, though the correlation is just barely significant (since $p < 0.05$, but just barely): $\tau = 0.4545455$, $z = 2.057176$; $p = 0.04474$. In other words, frequency of NMCs is roughly correlated with the extent to which a NNS's distribution of NMC head noun types is native-like. While overall NMC frequency may be a factor here, it is important to remember that this indicates a correlation, but not causation. Interestingly, the NNSs who produced fewer NMCs in total (such as speakers in 18, 16, 8, and 24) tended to diverge less from the NJSs in terms of their distributions of NMC head noun types. In contrast, the NNSs in Recordings 19, 11, 26, and 25 produced the most NMCs in total compared to other NNSs, and also had the largest KL-Div values, indicating the least native-like distributions of NMC head noun types. This may suggest that these speakers may have leaned too heavily on producing NMCs with lexical heads, where perhaps no modification would have been needed in order for the interlocutor to identify the referent of the head noun.

For a more detailed exploration of the factors influencing NNSs' use of NMCs, I once again considered the role of each learner's native speaker interlocutor by calculating a "Difference Value" for each pair of speakers. In this case, I added together the absolute values of: 1) the difference between the NNS's and the NJS's percentages of lexical noun-headed NMCs, 2) the difference between their percentages of generic noun-headed NMCs, and 3) the difference between their percentages of light noun-headed NMCs. The resulting

Difference Value metric for each NJS-NNS pair thus indicates how different the two speakers' distributions of various types of NMC head noun types were from each other.

The following table gives the rank order of the NJS-NNS pairs, from smallest Difference Value (most similar to each other; ranking 1) to largest Difference Value (ranking 12).

Difference Value ranking	NJS-NNS pairs in ranked order	**Difference Value**
1	18-JK	**7.7**
2	10-JE	**7.8**
3	11-JE	**12.3**
4	1-JC	**13**
5	19-JC	**16.8**
6	7-JE	**21.1**
7	26-JE	**21.3**
8	2-JK	**27.8**
9	24-JE	**39.6**
10	8-JE	**59.8**
11	25-JE	**61.1**
12	16-JE	**66.1**

Table 4.7. Difference Values between NNS-NJS pairs for NMC Head Noun Type distributions.

The results in Table 4.7, which take into account the NJS interlocutor of each NNS, show a slightly different picture from the results related to the KL Divergence above (which contrasted each NNS only with the summed grouping of the NJSs as a whole). The NJS-NNS pairs who most closely mirrored each other were those from Recordings 18, 10, 11, and 1. While this could have been expected for the NNSs in 18, 10, and 1, who had very small KL Divergences from the summed NJS distribution of head noun types, the NNS in 11—though producing a distribution similar to that of her interlocutor—had a relatively larger divergence from the NJSs as a group. The NNSs in Recordings 16, 25, 8, and 24 all

had different distributions of NMC head noun types compared to those of their individual NJS interlocutors (with Difference Values greater than 30); yet based on the KL-Div results for these speakers, we might have expected such divergence only from the speaker in 25. Additionally, we might have expected a large difference value for the NNS in Recording 19 (who had the second largest KL Divergence, after the speaker in 25), yet Table 4.7 shows that the NNS in 19, ranked fifth, is somewhat similar to his NJS interlocutor, relative to the other NNS-NJS pairings; based on these results and this NNS's unique distribution of NMC head noun types in Table 4.6 above, it seems that this conversation was less typical of the others as a group. These findings thus contrast with the KL-Div results from above. In other words, this additional look at the NNSs' production of NMC head noun types indicated that for only some of the participants, NNSs whose production more closely matched that of their own NJS interlocutor also closely matched the grouped NJS distribution as a whole—and vice-versa; however this was not the case for all NNSs. These Difference Value results alone do not seem to be very revealing, nor do they seem to be a good indicator of how native-like a particular NNS's head noun type distribution is, due to potential NJS accommodation and both NJS and NNS individual differences.

One final comparison worth making is between the learners' KL-Div results from their NMC type distributions and their KL-Div results from their NMC head noun distributions. By contrasting the results of this KL-Div analysis (section 4.7.1) with those of the prior one (section 4.6.1), we can see if the same NNSs had more (or less) native-like distributions of both NMC types and NMC head noun types, or if some NNSs were strong in one area but weak in another, compared to the NJSs. A correlation between the NNSs'

two separate KL-Div statistics would provide additional support for the idea that examining learners' NMC type and head noun type distributions, in contrast to those of NJSs, can serve as a measure of the extent to which the grammars of learners mirror those of native speakers.

The following is a plot of the KL-Div values of the NNSs' NMC head noun type distribution versus the KL-Div values of the NNSs' NMC structural type distribution; since these values are all very small (i.e., between 0 and 1), this is a plot of the negative base 10 logarithms of the KL Divergence values, to allow for an easier visual comparison. Each scatterplot point is labeled with the recording number of the NNS.

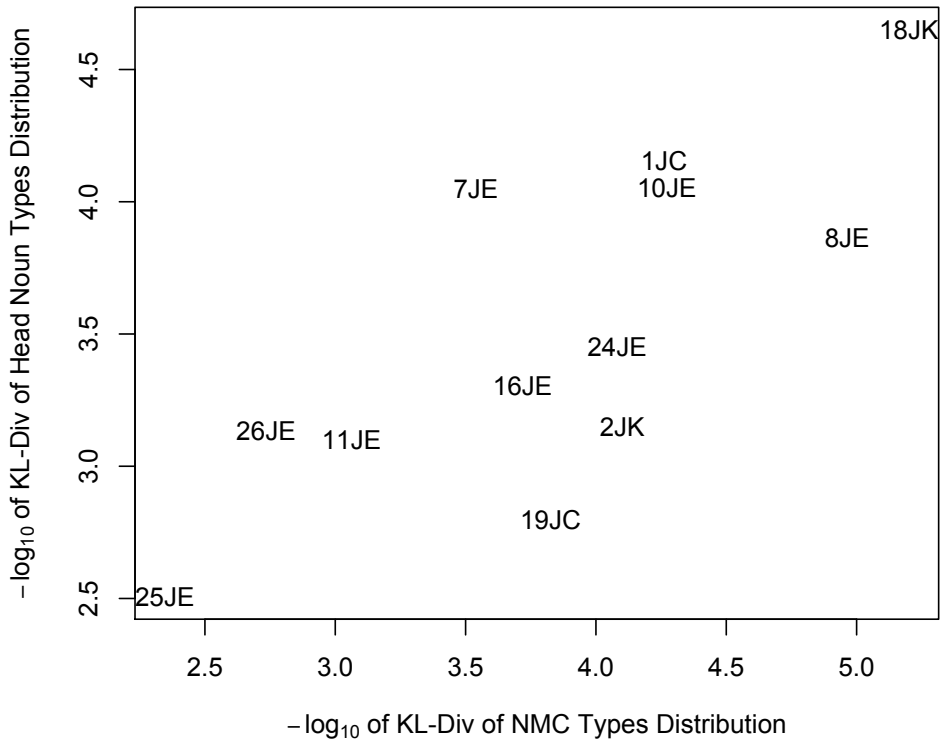

Figure 4.5. Plot of Negative Base 10 Logarithms of: Kullback-Leibler Divergence values of NNSs' NMC head noun type distribution (Y-axis) versus Kullback-Leibler Divergence values of NNSs' NMC structural type distribution (X-axis).

The plot in Figure 4.5 shows a roughly linear pattern illustrating that, for the most part, NNSs who had one large KL-Div value—seen as a smaller value on this plot of negative base 10 logarithms—also had a second similarly large KL-Div value (e.g., the NNS in 25), while NNSs who had one small KL-Div value also had a second similarly small KL-Div value (e.g., 18). In other words, NNSs were consistent across the NMC type and head noun type analyses in terms of the extent to which their NMCs mirrored those of native speakers. None of the NNSs seemed far stronger in one area than the another (i.e., none of them appears further out along either the X- or Y-axes).

I once again calculated Kendall's tau and found that the two KL-Div rankings correlate positively with each other ($p < 0.05$): $\tau = 0.5757576$, $z = 2.605757$; $p = 0.008758$. This significant correlation indicates that the use of a native-like distribution of NMC types and the use of NMCs to modify a native-like distribution of semantic head noun types are similarly difficult for L2 learners of Japanese. While such results do not necessarily indicate that one aspect of a native-like grammar could not be acquired without the other, they may suggest that the acquisition of these two aspects of Japanese noun modification go hand in hand. This correlation between two separate metrics additionally provides further evidence that investigating learners' NMC type and head noun type distributions, in contrast to those of NJSs, can serve as a measure of the extent to which the grammars of learners mirror those of native speakers.

4.8. Analysis of Previous Referents of Speakers' NMC Head Nouns

As mentioned above, I also investigated how closely NNSs' use of NMCs to introduce new referents into the discourse mirrored that of NJSs. The use of NMCs to modify head nouns serves a restrictive or specifying function with respect to the possible referents denoted by the head noun. It might be expected that many such head nouns would refer to new, rather than given, entities and thus have no previously mentioned referent in the prior discourse, particularly for lexical head nouns. Light head nouns, however, do tend to have corresponding referents in the previous discourse context (Takara 2012), which allows the referents of the non-specific light heads to be inferred from context. (The exception to this is the light/generic heads that are used adverbially and have no corresponding previously mentioned referents; however these have been excluded from the data set under examination here.)

In this section, I present a statistical analysis of the factors influencing the speakers' production of NMCs to modify head nouns with new versus previously mentioned referents. I used a generalized linear mixed-effects model, which allows for an examination of the behavior of individual speakers, rather than only the behavior of the group of native speakers versus the group of non-native speakers. The generalized linear mixed-effects model enables the individual differences among these 24 participants to be modeled with varying intercepts that have a normal distribution.

4.8.1. Variables

This analysis will focus on the following variables:

1. A dependent nominal variable (whether or not the referent of the NMC head noun was new or previously mentioned, REFERENT) with two possible levels: *NEW* for new referents and *GIVEN* for previously mentioned referents. (A previous mention was defined as an overt mention, whether using the same nominal expression or not, within the previous 10 clauses.)
2. An independent nominal variable (whether the speaker is a native Japanese speaker or not, SPKRTYPE) with two possible levels: *NJS* for Native Japanese Speaker and *NNS* for Non-native Speaker.
3. An independent nominal variable (the individual speaker ID, SPEAKERID) with 24 possible levels, for each of the 24 speakers, including both native and non-native speakers of Japanese, who participated in the study: labeled, e.g., *NNS-16* for the non-native speaker from Recording 16.

4.8.2. Data exploration

Table 4.8 shows the percentage of NMCs produced by NJSs and by NNSs whose head nouns had no previously mentioned referent (new referents) versus those that had previously mentioned referents.

	New referent	Previously mentioned referent	Total
NJSs	617 *(91%)*	64 *(9%)*	681 *(100%)*
NNSs	576 *(93%)*	42 *(7%)*	618 *(100%)*

Table 4.8. NMC head nouns: New versus previously mentioned discourse referents.

The results in Table 4.8 show that the NNS patterning is very similar to the NJS patterning: both groups of speakers produce a vast majority of NMCs whose head nouns have new discourse referents.

4.8.3. Methods

The model selection process for a generalized linear mixed-effects model involves first finding the optimal random effects structure, then continuing with model selection to see which fixed effects are part of the final model. The best structures were found using p-values from likelihood ratio tests.

The first model (Model 1) was fit by the maximum likelihood (Laplace Approximation), and included the following:

- random effects: random intercepts for SPKRTYPE and its interaction with SPEAKERID;
- fixed-effects predictors: SPKRTYPE.

The second model (2) kept the other variables, but removed the non-significant effect of SPKRTYPE from the random effects. This constituted the final and minimally adequate model.

4.8.4. Results

The final model shows a non-significant interaction of SPKRTYPE indicating that it is not affecting speakers' production of *NEW* versus *GIVEN* NMC head nouns (REFERENT): p = 0.391.

4.8.5. Discussion of Results

There was no significant difference between the NJS and NNS groups among the individual speakers' behaviors with respect to their production of NMCs to modify head nouns with new versus previously mentioned referents. It thus seems that both groups of speakers are using a majority of NMCs to introduce new referents into the discourse. The strong skewing toward NMCs with no previous referent differs from the findings of Takara (2012), but the preponderance of lexical—versus light or generic—head nouns in the present corpus also differed from that found in other studies involving only native Japanese speakers.

4.8.6. Further exploration of the data

The higher proportion of lexical-headed NMCs (seen in section 4.7.1. above) could be contributing to the skewing toward a higher number of NMCs whose head nouns have new referents, whereas a greater proportion of NMCs with light heads may have previously

mentioned referents. Before examining this statistically, the relevant descriptive frequencies are given in the following tables.

	New referent	Previously mentioned referent	Total
NJSs	307 *(92%)*	28 *(8%)*	335 *(100%)*
NNSs	326 *(93%)*	26 *(7%)*	352 *(100%)*

Table 4.11. **Lexical** head nouns: New versus previously mentioned discourse referents.

	New referent	Previously mentioned referent	Total
NJSs	140 *(98%)*	3 *(2%)*	143 *(100%)*
NNSs	101 *(95%)*	5 *(5%)*	106 *(100%)*

Table 4.12. **Generic** head nouns: New versus previously mentioned discourse referents.

	New referent	Previously mentioned referent	Total
NJSs	170 *(84%)*	33 *(16%)*	203 *(100%)*
NNSs	149 *(93%)*	11 *(7%)*	160 *(100%)*

Table 4.13. **Light** head nouns: New versus previously mentioned discourse referents.

Whereas the distributions for lexical and generic head nouns look similar to each other—both NJSs and NNSs use a large majority of NMCs to introduce new referents into the discourse—the distribution for light head nouns seems potentially different, with the NJSs producing a slightly higher proportion of light noun-headed NMCs that modify nouns with previously mentioned referents, compared to either lexical or generic noun-headed NMCs. To investigate whether this distribution of light head nouns was significantly different

from that of lexical head nouns, I compared the two data sets[25] using the chi-squared heterogeneity test (Zar 1999, Sheskin 2011, Gries 2013).

While the data from these two Tables (4.11 and 4.13) seem to exhibit differing trends, they do not differ significantly from each other. ($\chi^2_{\text{heterogeneity}} = 2.375$, $df = 1$, and $p = 0.1232759$).

The results show that, in contrast to L2 learners, native speakers use a slightly larger proportion of modifying constructions with light head nouns that have previously mentioned referents, though this was not a significant difference. Once a referent has been introduced into the discourse and can be considered given information, speakers can refer back to it using a NMC with a light head noun, where the NMC functions either to specify which of several previously mentioned referents the head noun denotes, or to provide additional, modifying information about the referent.

Whether the NMC head noun was lexical, generic, or light, the majority of both native and non-native speaker NMCs modified nouns that introduced a new referent. This seems to indicate that NNSs do not have trouble learning the function of NMCs.

4.9. Discussion

Japanese noun-modifying constructions present a variety of challenges to L2 learners. The verbal GNMCC type in particular has a fundamentally different structure from relative or complement clauses in English (Comrie 1998b), and has subtle differences in structure

[25] Using the chi-squared heterogeneity test, I compared only the data sets for lexical noun heads and light noun heads (from Tables 4.11 and 4.13), leaving aside that of generic noun heads (Table 4.12), since those NMCs fall in the center of the lexical-light continuum (or heavy-light continuum, as in Takara (2012: 35)), and my goal here was to test whether the distributions at either end of this continuum differed from each other.

from constructions that perform similar functions in Korean and Chinese (Matsumoto 1997). Japanese NMCs take various forms, ranging from simple *no* (genitive) types—similar to noun-noun compounding in English—to attributive adjective types, to more complex GNMCC types, which may depend more heavily on pragmatic context in order to interpret the head noun's relationship to the clause. Yet Japanese NMCs are one of the structures that non-native speakers need to master in order to more closely approximate a native-like L2 speaking ability. This case study has examined the NNSs' use of NMCs with respect to the NJSs in order to investigate the role of conversations with native speakers in learning and the challenges faced by NNSs at different stages of experience with conversational Japanese.

Examined as a whole, the NNSs produced NMCs with remarkably similar frequencies and distributions compared to the grouped NJSs, although some differences became apparent upon examining the NMCs of individual NNSs.

Not surprisingly for these potentially challenging constructions, the NNSs in the corpus produced slightly fewer NMCs in total compared to the NJSs, relative to their total amounts of talk (measured by IUs), as mentioned above. However, NNSs produced more *no* (GEN) types than NJSs in terms of the proportion of NMCs produced by each set of speakers. The NNSs seem to be relying much more heavily on the *no* (GEN) type (and the *_ono* 'DEM' type) to carry out the modifying and specifying functions of NMCs, producing fewer other NMC types compared to the distribution seen among NJSs. It was also not surprising that the NNSs produced relatively fewer verbal NMCs (as well as far fewer of the verbal sub-types: "*iu*" and "*tte*"), since verbal NMCs are arguably the most challenging

type to learn, primarily due to the pragmatic and at times highly abstract nature of their interpretations.

Less expected was that the NNSs did not rely more heavily on attributive adjective-type NMCs, considering their ostensible simplicity and structural similarity to such constructions in English, the native language of 8 of the 12 NNSs. One possibility is that many of the L2 learners had already picked up the native speaker Japanese discourse pattern of using adjectives predicatively more often than attributively (Ono and Thompson 2009); however this would not account for why the NNSs did not produce the same proportion of attributive adjective constructions as NJSs but instead produced an even smaller percentage of them. Another possibility is that L2 learners have difficulties with and ambivalence towards the differing structures of attributive adjective NMCs depending on the word class of adjective: *i*-adjectives can appear immediately before the noun they modify, while *na*-adjectives require the suffix *-na* in between; this difficulty with potentially confusing the type of adjective (a common mistake for beginners[26]) could lead to a hesitancy to produce these types of constructions. A third factor could be that if we view Japanese noun modification along a continuum, the adjectival NMCs may be challenging for NNSs in their similarity to the structurally complex finite-clause GNMCCs.

The NNSs with less experience in Japan had very different distributions of the three NMC structural types examined above, compared to other NNSs as well as to NJSs, as evidenced by their low KL-Divergence rankings, for the speaker in Recording 25 in particular. The distribution of NMC types produced by the speakers in Recordings 25 and

[26] I have impressionistically observed this mistake to be very common among first-year Japanese language students, in my two years of experience as a teaching assistant for beginning Japanese.

26 proved to be an amplified version of the distribution of NMCs produced by the NNSs as a whole: these speakers produced far more *no*-type NMCs and far fewer (or zero) verbal and attributive adjective-type NMCs, indicating that such types are indeed more difficult to master.

While the speakers in 25 and 26 stood apart as having a non-native distribution of restrictive/specifying NMC types, nearly all of the other NNSs came quite close to matching the NJSs in terms of distribution of construction choices. This seems to indicate that while verbal and adjectival types may prove difficult for NNSs early on in their L2 language development and conversational exposure, as L2 learners progress, then eventually—regardless of their precise amount of experience—NNSs tend to even out and plateau around a similar level, coming close to a NJS-like distribution of NMC types. The few exceptions to this (the speakers who, although experienced, nevertheless produced NMCs with a non-native distribution) may either have some idiosyncratic fossilization in their conversational Japanese or may have been affected by the topic matter around which their interactions centered during the short 20-minute conversations used in this dataset.

Individual NJS-NNS pairs were also examined in terms of their Difference Values based on NMC types. In general, these results were in line with those of the KL Divergence analysis: the NNSs with the least experience tended to differ more from their NJS interlocutors: the NNSs in Recordings 25 and 26 deviate quite a bit from their NJSs, while the NNSs in Recordings 10 and 2 mirrored their NJSs most closely. As mentioned above, the results seem to roughly indicate that the more the NMC use of a pair of NJS-NNS interlocutors resemble each other individually, the more likely the NNS's patterns of speech are to resemble those of NJSs.

Just as with the analysis of the L2 learners' NMC types, the analysis of their NMC head nouns revealed that the NNSs behaved similarly to the native speakers, with only a few NNSs deviating from the NJS group average—including the speakers in 25 and 26, but also the more experienced NNSs in 19 and 11. As a whole, the results suggest that, compared to NNS acquisition of NMC structural types, it is less predictable when NNSs will begin to mirror NJSs in terms of the types of head nouns they modify with NMCs.

Of the NMCs that both NJSs and NNSs produced, the majority had lexical head nouns, followed by light head nouns; generic nouns were the least frequent among both groups' NMCs. I noted above that these findings contrast with the greater frequency of light head nouns found by Takara (2012) and Ono & Thompson (2009) for conversational Japanese data among native speakers. This could be an indicator of the differences between conversations among native speakers versus NNS-NJS conversations (which could feature subtle NJS accommodation to the NNSs in terms of the grammatical structures used). Another factor that could account for these differing results is that Takara (2012) only focused on GNMCC-type NMCs, and Ono & Thompson (2009) examined only (*i*-adjective) attributive adjective NMCs, with neither looking at *no*-type NMCs. Despite these differences in token frequency for heavy (lexical) versus light head nouns, both Takara (2012) and Ono & Thompson (2009) found that the type frequency was much higher for lexical heads than for light heads; this holds true for my data as well. Compared to the wide range of possible lexical heads, there is a smaller set of light heads that tend to be used in fixed grammatical expressions; since each fixed grammatical construction needs to be acquired individually by L2 learners, this may be one reason why such using light heads in a native-like way is challenging for non-native speakers.

Individual NJS-NNS pairs were also examined in terms of their Difference Values based on NMC semantic head noun types. However in this case, the Difference Value results were not as consistent with the KL-Div results. It is important to remember that the Difference Values are not an objective indication of non-native speaker ability; rather, the results could have been affected by a variety of factors, including the NJS's personal speaking style, the topics of conversation, asymmetry in terms of production of conversational narratives, etc. In other words, although a pair of speakers' distributions are different from one another (resulting in a large Difference Value), this does not mean that the majority of a learner's uses of a particular type of NMC head noun—in context—were not native-like. For example, the pair of speakers in Recording 24 had a Difference Value of 39.6: the NNS could have produced each of his lexical noun-headed and light noun-headed NMCs in an appropriate and native-like context; the Difference Value is only indicative of the two speakers' differing distributions. In contrast to the Difference Value ranking for NMC types, the results of the Difference Value ranking for head noun types did not uncover much additional information.

It is also important to remember that all of the analyses above focus mainly on the relative frequency (distributions) of NMC structural types and head noun semantic types among individual/groups of speakers, rather than on the token frequencies themselves. If we consider the overall frequency with which NNSs produced NMCs, the speakers who had the largest KL Divergence values for NMC head noun types (indicating the least native-like distributions)—speakers in Recordings 25, 26, 11, and 19—actually produced the greatest number of NMCs compared to other NNSs. In contrast, others like the speaker in 18 (and those in 8 and 16), who had very low to mid-range KL Divergence values for

NMC head noun types (indicating more native-like speech), produced the fewest NMCs in total. This pattern may indicate that the NNSs who produced more NMCs also relied too heavily on NMCs with lexical heads, where other formulations would have carried out similar communicative functions. While the learners' overall NMC frequency was roughly correlated with their divergence from NJS distributions of NMC semantic head noun types (Figure 4.4), this is merely a correlation rather than causation. Moreover, frequency did not seem to be correlated with the learners' divergence from NJS distributions of NMC structural types (Figure 4.2). (Indeed, raw frequency itself was not expected to be a predictor of the extent to which the learners' production mirrored that of NJSs; the trend observed above for head noun types may simply be epiphenomenal.)

After ranking the NNSs twice, based on two separate KL Divergence statistics—one for NMC type distribution and one for head noun type distribution—the two rankings of NNSs based on their KL Divergence values were compared (Figure 4.5). The results revealed a significant correlation indicating that the L2 acquisition of a native-like distribution of the two aspects of Japanese noun modification may be similarly difficult. This suggests that they may be acquired hand in hand: as learners acquire native-like distributions of NMC types, they will also tend to produce more native-like distributions of semantic types of NMC head nouns, and vice-versa—this is not to say that the acquisition of one of these aspects causes or leads to the acquisition of the other, since the present data set could not provide evidence for such a claim; rather, as NNSs acquiring NMCs pay attention both to the various NMC forms and NMC discourse functions in conversational Japanese, their NMC use tends to improve (in the sense that it becomes more like a NJS's) in various ways, perhaps simultaneously, due to the interrelatedness of discourse and

grammar. The significant correlation between the two separate KL Divergence rankings discussed above provides further support for the idea that examining learners' NMC type and head noun type distributions, compared to those of NJSs, offers useful insight into the extent to which the grammars of learners mirror those of native speakers.

The question of whether or not speakers modified head nouns that had previously mentioned referents versus new referents could not be investigated in as much detail, since a significant majority (over 90%) of both native and non-native speaker NMC heads had new referents, making the baseline too high for a detailed comparison of individual speaker results. Nevertheless, the NNSs could once again be observed to produce strikingly similar discourse patterns to those of NJSs; the groups of speakers were not significantly different from each other in this respect, according to the results of a generalized linear mixed-effects model. The use of NMCs to modify nouns that lack a previously mentioned referent in the discourse suggests that speakers often employ NMCs to introduce new referents into the conversation (as seen in examples (64) and (65) above). The NNSs' similar patterning to NJSs in terms of the previous referent analysis indicates that this function of NMCs may be relatively easily learned, especially compared to the challenges presented by the NMC forms themselves, as suggested by the less native-like distribution of NMC forms produced by less experienced speakers, seen in earlier analyses in this chapter.

Among head noun types examined in terms of previous referents, NMCs with light head nouns were the only type for which NNS usage seemed to differ from NJS usage: native speakers used a slightly larger proportion of anaphoric light heads (with a previously mentioned referent), compared to NNSs. However, the difference between the

data sets for light heads and for lexical heads was not significant, according to a chi-squared heterogeneity test. In other words, both native and non-native speaker NMCs tend to modify nouns that introduced a new referent, whether the NMCs modify light or lexical heads. As discussed above, NMCs with light heads were the type predicted to be the most challenging for NNSs, since L2 learners are more likely to be exposed to contextualized anaphoric NMCs embedded in conversational discourse than in classroom exercises that target specific grammatical constructions; thus—as mentioned in the introduction—NMCs whose head nouns are semantically light or generic may be underrepresented in language used in classroom settings. Nevertheless, these results suggest that NNSs do not have trouble learning the function of NMCs, including those with light heads.

Across each of these analyses, several different speakers have surfaced as the "most native-like" according to different metrics and ways of looking at the data; in other words, nearly all of the NNSs in this study produced quite native-like patterns of speech, since nearly all of the NNSs who participated in this sample were quite experienced L2 speakers of Japanese. In contrast, only a few specific speakers consistently showed up as the "least native-like" outliers, revealing that some aspects of conversational Japanese, particularly those that rely on pragmatic interpretations and discourse embeddedness, are more challenging for 'intermediate' beginning or less-experienced L2 learners. NNSs acquiring Japanese noun-modification constructions must pay attention both to the forms of various grammatical constructions and to the various functions of NMCs to a) introduce a new referent, b) specify a referent, or c) provide additional information about a given referent; moreover, some more complex verbal NMCs additionally require that speakers call on their awareness or assumptions regarding real-world or contextual knowledge that is

shared with their interlocutor. Nevertheless, while certain NMCs may be more difficult for NNSs to learn, on the whole they produce them in surprisingly similar type and frequency distributions as NJSs.

4.9.1. Suggestions for Future Research

Future research could take up these results and further examine the acquisition of NMCs in a variety of ways. In particular, it would be valuable to further investigate the acquisition of verbal GNMCCs using either experimental methods or a much larger corpus of NJS-NNS Japanese. As the sample size of GNMCCs was relatively small in the corpus used for this study, my analyses were limited to discussing verbal GNMCCs in comparison to other NMC types rather than delving into the acquisition of various types of GNMCCs themselves. It would be interesting to explore the acquisition of sub-types of verbal GNMCCs among L2 learners based on the following properties, among others: the structural complexity of the GNMCC clause, the semantic/pragmatic complexity of the relationship of the head noun to the clause, the grammatical relation of the head noun to the predicate of the modifying clause (or the pragmatic relation of the head noun to the modifying clause), and the grammatical relation of the GNMCC (head noun) to the predicate of the larger main clause.

One experimental/classroom study that might be particularly interesting would be to create comprehension tasks for GNMCCs, presented in small stretches of discourse context, that have very abstract/pragmatic head noun-clause relationships. L2 learners' comprehension of such tasks could be judged using a pre-test/post-test format following

either a certain amount of exposure to conversations with native speakers or some explicit classroom instruction on a range of acceptable GNMCCs/interpretations. Compared to such comprehension tasks, however, it could be quite difficult to create a task (short of a targeted context-less classroom exercise) in which speakers produce frequent NMCs, or certain types of NMCs, in a conversational context. Because of this, larger corpora of naturally-occurring conversation would be needed for similar types of NMC-production studies.

Finally, it would be interesting to compare the usage of all the NMC types under investigation here to that which occurs in conversations among native Japanese speakers, to see how this differs from NJS usage in conversations with L2 learners and gauge the extent to which NJSs may be adjusting their speech to accommodate L2 interlocutors.

Chapter 5: Subject Realization

5. Subject Realization by Japanese Learners and Native Speakers

Input from naturally-occurring conversation crucially provides non-native speakers with positive linguistic evidence of native speaker-like frequency and contexts of usage. Many of the interactional discourse phenomena found in conversation, such as backchannels, repetitions, social accommodation, cognitive priming effects, and referent tracking during conversational narrative, are rare or non-existent in the classroom setting. Yet exposure to these types of positive evidence is essential for developing a native speaker-like, discourse-embedded grammar. This chapter serves as the third case study of Japanese conversational phenomena, the native-speaker-like usage of which is highly dependent on discourse-pragmatic factors, and which could therefore best be acquired from experience with naturally-occurring conversation. Specifically, this chapter examines the discourse phenomenon of subject realization in conversational Japanese, and seeks to address the second research question regarding the extent to which the grammars of non-native speakers exhibit the same relationships between form and function as those of native speakers. This analysis examines the differences between the form-function relationships observed in the conversational grammars of native speakers vs. more advanced learners vs. less advanced learners, and allows for a glimpse into the impact of positive evidence from naturalistic input on L2 conversational production.

The chapter begins with an introduction to subject and topic in Japanese, comprising background on Japanese case-markers, basic sentence constructions, and

subject/case-marker realization. The goals of this analysis are then stated, followed by a section explaining the coding and giving an overview of the statistical methods used. The statistical analysis—including an exploration of the data—is then presented, followed by a discussion section.

5.1. Introduction: Subject and Topic in Japanese

Japanese is a nominative-accusative language; however, the basic concept of grammatical subject in Japanese is difficult to define, because its definition is intertwined with that of (discourse) topic.

Li and Thompson (1976: 460) have categorized Japanese, along with Korean, as a "subject-prominent and topic prominent" language. Indeed, both types of noun phrases occur frequently in Japanese, and the function of subject cannot be considered separately from that of topic. Many second language learners of Japanese find that comprehending—let alone mastering—the native-speaker-like use of the subject and topic markers, *ga* and *wa*, is particularly challenging.

In general, noun phrase arguments that are grammatical subjects are marked with the nominative case-marker *ga*.[27] Kuno (1973) has described the functions of *ga* as indicating either "neutral description" (see ex. 1) or "exhaustive-listing" (see ex. 2). (Examples 1 and 2 are from Kuno 1973:38, but the interlinear glosses are my own.)

[27] Ono et al. have proposed an alternative analysis for the particle *ga* in which it is not assumed to be a nominative case marker, arguing for a pragmatic status of *ga*, based on their claim that *ga* is used in pragmatically highly marked situations "where there is something 'unpredictable' about the relationship between the *ga*-marked NP and the predicate" (2000: 61).

(1) *ame-ga* *futte-imasu*
rain-NOM fall-PRS.PROG
'it's raining.'

(2) *John-ga* *gakusei* *desu*
John-NOM student COP
'(of all the people under discussion) John (and only John) is a student.'

It can also be stated, generally speaking, that Japanese discourse topics are marked with the particle *wa* (which will be glossed as TOP). However, it is not the case that *wa*-marked arguments are always only topics; *wa*-marked arguments (i.e., topics) can also be subjects.

Iwasaki (2002: 101-2) argues that in Japanese the label "subject" broadly refers to "the first noun phrase of the clause which is an argument of the verb," pointing to the fact that the first noun phrase in Japanese argument structure demonstrates some unique syntactic behaviors, which would support this grammatical category, despite the lack of so-called "subject-verb agreement" in Japanese. For example, the first noun phrase of a clause is the only argument that can serve as an antecedent for *jibun* 'self' (the reflexive pronoun) (267), and the only argument that can trigger the use of subject-honorifics (297).

It is important to note that Iwasaki's definition of subject does not rely on nominative case-marking with the particle *ga*, but rather on word order; thus, some *wa*-marked NP constituents can be seen as subjects. In other words, subject arguments in Japanese may be marked with either *ga* or *wa* (among other particles, as discussed below); however, whether *ga* or *wa* is used depends on many factors including the type of construction.

There are two types of declarative utterance constructions in Japanese: "topic-comment" and "topic-less" clauses (Iwasaki 2002: 217; see also Sakuma 1941). In "topic-

comment" structures, the first argument (i.e., the subject) is marked with *wa*, while in "topic-less" structures, the subject is marked with *ga*.[28]

(3)	19-JC NJS	*boku-wa*	*daitai*	*imasu*	*ne.*
	(IU 901)	1SG-TOP	mostly	exist.POL	IUFP
		'I'm around most (of the time).'			
(4)	1-JC NJS	*oneechan-ga*	*iru*		*kedo,*
	(IU 778)	older.sister-NOM	exist		but
		'(I) have an older sister but…,'			

"Topic-less" clauses are used to verbalize a speaker's "immediate perception" or when introducing a new referent into the discourse (Iwasaki 2002: 225). The first of these two functions corresponds to Kuno's (1973) "neutral description," while the second corresponds to many scholars' observations that *ga* can broadly be said to mark an NP as "new"; thus it serves a presentational function (Yamaguchi 2007, Johnson 2008). However, Iwasaki suggests that such topic-less constructions (with no *wa*-marked element) should not be regarded as "prototypical declarative sentence[s]" (2002: 225).

The definition of topic has been noted to vary from language to language (e.g., Chafe 1976: 55). NPs marked with *wa* can function as prototypical topics, or "hitching posts" to which a predication or multiple predications are added (Chafe 1976; cf. Iwasaki 1987). According to Kuno, in Japanese only referents that have been mentioned in the preceding discourse or "nouns of unique reference in this universe of discourse" (such as *the sun*) can be recruited as topics (1973: 39). For those referents that are not already active in the speakers' consciousness or have not already been introduced into the discourse, they must first be introduced, most likely as *ga*-marked subjects, using a presentational clause

[28] There are also topics that are not subjects, though subject topics are by far the most frequent (National Language Research Institute study 1964, cited in Iwasaki 2002: 235).

style, before they can be marked as topics. Japanese topics must be "sufficiently activated, or salient, in the mind of the addressee" (Iwasaki 2002: 221); topics are therefore inherently a category that is defined by and arises from communicative discourse contexts.

Interestingly, the "topic-comment" structure cannot be used unless the speaker believes that the topic referent is "'identifiable' to the addressee" (Iwasaki 2002: 220); this corresponds to Li and Thompson's (1976) observation that topics must be definite. In Japanese non-identifiable nouns such as interrogatives *nani* 'what' or *dare* 'who' cannot be marked as topics with *wa*, but only as subjects (of "topic-less" clauses) with *ga* (Iwasaki 2002: 220).

5.1.1. The *-wa/-ga* Constructions

There are two types of constructions that use the *-wa/-ga* structure. The first—like the double object construction (discussed further below)—resembles a single-argument stative predicate as in examples (5) and (6) from Iwasaki (2002: 223):

(5) *zou-wa* *ookii*.
elephant-TOP big.NPST
'the elephant is big.'

(6) *zou-wa* *karada-ga* *ookii*.
elephant-TOP body-NOM big.NPST
'the elephant – its body is big.'

In example (6), the comment part of the "topic-comment" structure (*karada-ga ookii*) is itself a complete clause. The following is an example of this type of *-wa/-ga* construction found in my data:

(7) 25-JE NJS *uchi-wa* *mou* *iku* *yotei-ga* *aru* …
(IU 1286) 1SG-TOP already go.NPST plans-NOM exist.NPST
'I already (have) plans to go…'

In examples (6) and (7), the *-wa*-marked phrases are not one of the main core arguments of the predicate, but rather are a type of "extra-thematic" argument (Iwasaki 2002: 224; Shibatani 1999). In other words, whereas the grammatical "subject" argument of example (5) is the *wa*-marked *zoo* 'elephant', the subject arguments of examples (6) and (7), respectively, are the *ga*-marked *karada* 'body' and *yotei* 'plans'.

Furthermore, this type of *wa*-topicalization does not apply to elements inside a GNMCC (generalized noun-modifying clause construction, as discussed in Chapter 4); such elements must be marked by *ga* rather than *wa* (Nakamura 2006).

The second type of sentence that uses the *-wa/-ga* structure involves a specific type of predicate, such as *suki* 'like' or *jouzu* 'good at', which can take two nominative-marked noun phrases (Iwasaki 2002: 224). These are considered "stative-transitive" predicates, as defined by Kuno (1973). Japanese stative-transitive predicates include the adjectival predicates: *suki* 'like', *kirai* 'dislike', *jouzu* and *tokui* 'good at', *heta* and *nigate* 'bad at', *hoshii* 'want', *tabetai* 'want to eat', *nomitai* 'want to drink', etc. Several verbal predicates also fall into this category, including: *wakaru* 'to understand', *iru* 'to need', *dekiru* 'to be able to', *mieru* 'to be able to see', *kikoeru* 'to be able to hear', etc. (Johnson 2008: 49-51). For example:[29]

(8) 11-JE NJS *uchi* *Saundo.obu.Myuujiku-ga* *suki* *dat-ta*
(IU 936) 1SG Sound.of.Music-NOM like COP-PST
'I liked (/used to like) "Sound of Music".'

[29] Unless otherwise noted, all of the utterances—including non-native speaker utterances—that I use to exemplify grammatical constructions in Japanese have been judged to be grammatical by a native Japanese speaker (my research assistant).

(9) 16-JE NNS *Mari-san-wa* *nani-ga* *suki?*
(IU 453) 1SG-HON-TOP what-NOM like
'Mari-san, what do you like [referring to types of desserts]?'

In (8) the topic, *uchi*, could be marked by *wa*. Example (9) is a "textbook" example of this type of construction (though not typical of those found in my data in that both the *-wa* and *-ga* NPs are expressed and case-marked).

(10) 24-JE NJS *iroiro-na* *koto-ga* *benkyou* *dekiru* *kara,*
(IU 725) various-ATTRIB. things-NOM study be.able.to since,
'since (one) can learn about various things [when living abroad],'

Example (10) shows this construction used with a verb of ability, *dekiru*, though in this case no *wa-marked* topic is expressed.

5.1.2. Use of *-wa* to mark Contrast

The (topic-marker) *wa* functions either to mark the topic of an utterance as explained above, or to mark a contrastive noun phrase (Kuno 1973). "Contrast" is used here to indicate that "two or more entities are brought into opposition," a function which is independent of new or old information (Yamaguchi 2007: 102), yet highly dependent on the prior discourse (Maruyama 2003).

(11) 16-JE NJS *de* *hitori-wa* *tabete-i-mashi-ta.*
(IU 578) and one.person-TOP eat-PROG-POL-PST
'so one person was eating.'

hitori-wa *matte-i-mashi-ta.*
one.person-TOP wait-PROG-POL-PST
'another(/one) person was waiting.'

(12) [Recording: 25-JE, IU 1060]

1	NJS	*hashi-wa*	*nai*	*kedo,*	
		bridge-TOP	exist.NEG	though,	
		'there isn't a bridge, but,'			
2	NNS	*hontou* --			
		really			
		'really -- '			
3	NJS	*umi-no,*			
		ocean-GEN			
4	NJS	*naka-o*	*tooru*	*tonneru-ga*	*aru.*
		inside-ACC	go.along	tunnel-NOM	exist
		'there's a tunnel that goes under the water.'			

Examples (11) and (12) each contain a pair of clauses—uttered consecutively by the same speaker; the subject in each of these clauses is contrastive, although in (11) both subjects are marked by -*wa*, whereas in (12) one is marked by -*wa* and one by -*ga*. The contrast is created in part by the discourse context, not solely by the *wa*-marking.

When the element of the clause that is contrasted is a grammatical subject or object, the particle *wa* is used in place of the case-markers *ga* (NOM) and *o* (ACC); however, *wa* does not replace any other oblique case particles, such as *ni* (DAT), *de* (LOC), etc., but rather is used in addition to those particles (Johnson 2008: 41-42).

(13)	16-JE NJS	*nanka*	*hitori-de*		*hairu-ni-wa*	*chotto*	
	(IU 560)	DM	one.person-OBL		to.enter-OBL-TOP	undesirable	
		tte-iu-ka	*no*	*o-mise*	*atta*	*yo*	*ne?*
		DM	GEN	HON-store	exist-PST	IUFP	IUFP
		'it was the kind of store you wouldn't want to go into alone.'					

As seen in the following example and in (12) above (where only one clause had a *wa*-marked NP), two contrasting clauses that each use *wa* are not necessary in order to express contrast; contrast can also be expressed with a single clause (Yamaguchi 2007: 102).

(14) 1-JC NNS (IU 727)

kisha-wa	*san-jikan*	*hodo*	*de,*
train-TOP	three-hours	about	and

'by train it takes about three hours, so,'

sonna	*kyori.*
that.kind.of	distance

'about that far.'

The first clause in example (14) was uttered by way of explanation of the approximate distance between two cities in the speaker's home country, China. The NP *kisha* 'train' is not identifiable and is not successively taken up as a discourse topic (the distance itself continues to be the topic of conversation, as seen in the subsequent IU). The NP *kisha* is not a topic, but is marked with a *-wa* to indicate contrast—perhaps contrasting with other possible modes of transportation which would take differing amount of times to go that same distance. However, these other types of transportation are not overtly mentioned; therefore (14) is an example of contrast being expressed within a single clause.

When more than one *wa*-marked element appears in a clause, the first is usually the topic, while the rest indicate contrastive elements (Iwasaki 2002; Johnson 2008).

(15) 10-JE NJS (IU 805)

kibishii	*koto-wa*	*hahaoya-wa*	*i-u*	*kedo,*
strict	things-TOP	mother-TOP	say-NPST	but,

'the mom (is the one who) says the strict things, but,'

The topic of example (15) is *kibishii koto* 'strict things', while the contrastive element is the mother (the utterance that follows this one in the discourse is about strict things with respect to the father).

Japanese clauses may also exhibit "propositional contrast," meaning that the entire clause is contrasted with another proposition, rather than one particular element in the clause being marked as contrastive (Kuno 1973).

5.1.3 Realization of Subjects and Topics

In contrast to the examples given thus far, subject arguments are not expressed in all Japanese clauses; in fact they are quite often left unrealized, in what has been discussed as "pro-dropping," "ellipsis," or "zero anaphora" (e.g., Clancy 1980, Hinds 1982). Shibatani describes "PRO-dropping" as a process in Japanese—and Romance languages—in which "pronouns are omitted … because of their recoverability from the context" (1985: 839). Ono and Thompson (1997: 484) have proposed that predicates should not be seen as having "obligatory" arguments or "slots" calling for either a mentioned referent or a "zero" (although the intended referents may be easily inferred from pragmatic context). Subsequent studies, claiming that unexpressed referents can usually be inferred from context, have therefore argued for the importance of examining this phenomenon only in the discourse contexts of interactional or conversational environments (Takagi 2002).

Indeed, many clauses in my data do not have realized subjects. Although in some cases a particular subject is not readily identifiable for a predicate, the majority of intended referents are presumably inferable both from the discourse context and from speakers'

exemplar mental representations of the usage of that predicate (based on previous experience with its frequency and contexts of use) (cf. Bybee 1985, 2006, 2010). In other words, though the argument structure of a predicate is not fixed, it still exists as a "structure of expectations triggered by a verb" (Du Bois 2009: 55) due to repeated experience with its usage, which has an effect on mental representation (Bybee & Hopper 2001, Bybee 1985, 2010).

The following are examples of clauses from my data where no subjects were realized:

(16)	16-JE NNS	*a*	*mainichi*	*nihoncha*	*nonde-i-ru*	*yo.*
	(IU 220)	DM	every.day	Japanese.tea	drink-PROG-NPST	IUFP
	'oh (I've) been drinking green tea every day.'					

(17)	11-JE NJS	*eigo*	*kara*	*nihongo-ni*	*kaer-u*	*toki,*
	(IU 219)	English	from	Japanese-DAT	change-NPST	time,
	'when (one) translates (something) from English to Japanese,'					

This type of non-realization of subjects occurs when the information is already presumed to be active in the interlocutor's consciousness (Yamaguchi 2007: 114). Many scholars have noted how remarkable it is that Japanese allows for this phenomenon to occur so frequently (Halliday and Hasan 1976; Makino and Tsutsui 1986; Hinds 1986) since Japanese has no subject-verb marking (or "agreement"). However, Iwasaki argues that information in Japanese sentences is often unspecified or unrealized in an utterance simply because that information is "pragmatically retrievable" (2002: 9).

In other words, the unexpressed information is usually either readily inferable or is already activated in the consciousness of the conversational participants, which makes the referents of most such unexpressed subjects good candidates for Chafe's definition of a

"discourse topic." Chafe has defined discourse topics as "coherently related events, states, and referents" that are held in the speakers' active consciousness as they participate in the discourse (1994: 120-1). Whereas new information in Japanese is introduced in full nominal (or pronominal) propositional form (e.g., Yamaguchi 2007: 116), old (or "given") information—that which has already been introduced and potentially taken up as a discourse topic—can be left unrealized through a succession of clauses, particularly those that constitute a coherent event sequence.

(18) 1-JC NJS (IUs 778-785)

oneechan-ga *i-ru* *kedo,*
older.sister-NOM exist-NPST but,
'(I) have an older sister but,'

oneechan,
older.sister

Yamanashi-ni,
Yamanashi-LOC

maa *shigoto-de* *itte-i-ru,*
well job-OBL go-PROG-NPST
'well my sister's in Yamanashi for work.'

mou *kaetteku-ru* --
anymore return-NPST

hontondo *kaetteko-na-i* *to* *omo-u,*
mostly return-NEG-NPST COMP think-NPST
'(she) mostly doesn't come home anymore, (I) think.'

koumuin *ya* *shi*.
civil.servant COP IUFP
'because (she) is a government employee.'

In example (18), the speaker introduces a new referent (her older sister) into the discourse by marking it with *ga*. Subsequently, the speaker continues for several utterances which

take up the older sister as a discourse topic, but without re-stating the noun phrase, as this referent is now already old information—given or activated—in the discourse. As demonstrated by this example, it could be predicted that, in general, when subject referents are ***new*** to the discourse, they will likely be realized, whereas when subject referents are ***given*** information, they may be left unexpressed.

As stated above, more often than not, conversational participants are easily able to infer the intended referent of a predicate; however, there are also instances in which referents are unclear, and participants may engage in "the work of reference negotiation," when the hearer seeks clarification about what is intended to be the referent of an unexpressed participant (Takagi 2002: 178), as in the following example.

(19) [Recording: 1-JC, IU 1014]

1	NNS	*dandan*	*dandan,*
		gradually	gradually
		'gradually, more and more,'	
2	NNS	*hanarete-i-ru*	*tte* *sonna* *kanji-ga* *su-ru* *ya*
		distance-PROG-NPST	QUOT that feeling-NOM do-NPST IUFP
		'it feels like (they) are distancing themselves (from each other).'	
3	NJS	*un*	*un.*
		yeah	yeah
		'uh huh.'	
4	NJS	*kazoku*	*ne?*
		family	IUFP
		'families, right?'	

This type of double-checking, or confirmation seeking regarding the listener's understanding of an inferred unrealized referent takes place in conversations among native speakers (e.g., Takagi 2002), and is not limited to interactions with L2 learners.[30]

In addition to predictions about subject realization based on **givenness** (i.e., new arguments will be realized; given arguments will not be realized), the use of **contrast** or contrastive emphasis also leads to specific predictions with respect to subject realization. Firstly, just as new information is often marked with the nominative case-marker, *ga* (which must occur with an overt argument), contrastive information is marked with the topic-marker *wa* (which likewise requires an overt argument); it could be predicted that when subjects are contrastive, they will likely be realized. Indeed, in written language, Yamaguchi (2007: 117-119) observes that the first person pronoun *watashi* "becomes overt" under several circumstances, including: when it is contrasted with another entity and when it receives emphasis. Yamaguchi also observes, "contrast and emphasis are two sides of the same coin in that emphasis is at work when two (or more) entities are different" (2007: 103).

[30] As discussed in Chapter 3, in the data used for this study, native speakers expressed confusion about the referents of non-native speaker utterances, explicitly signaling their lack of understanding, only five times in total. (Example (19) was not counted as such a case, since the native speaker here is simply confirming the accuracy of her understanding of the referent, rather than producing an interrogative or otherwise indicating either surprise or confusion.) Native speakers explicitly expressed confusion and sought clarification from learners surprisingly infrequently, especially considering all of the discourse-pragmatic factors described in this chapter that are involved in producing clauses without realized subjects and inferring the referents of non-realized subjects. I did not, however, attempt to investigate how often the non-native speakers had trouble understanding the referents of native speaker utterances, in part because of the difficulties of identifying the specific source of any non-native speaker confusion or comprehension issues.

5.1.4. Realization of Subject Case-Marker

Even in clauses in which the subject argument is realized, the case marker itself (usually—but not always—*ga* or *wa*, as discussed above) may itself be omitted. However, these case-markers themselves are informative, as discussed above. For example, the particle *ga* can be used to indicate new information (Yamaguchi 2007: 93), it is therefore less likely that *ga* would be omitted when the speaker wishes to make salient the newness of that information, as in the case of emphasis. Indeed, Tsutsui (1983) has argued that it is unnatural for *ga* to be omitted if the NP is the most "emphatic" or unexpected element in the clause; rather, it is more often omitted when the utterance carries expected information (as cited in Ono et al. 2000). Likewise, because *wa* can be used to mark a contrastive element, it follows that it would be less likely that *wa* would be omitted in clauses where the speaker wishes to make this contrastive emphasis salient.

5.2. The Goals of this Analysis

In presenting the background information in Section 5.1, the introduction, I have already highlighted several general observations about patterns of conversational Japanese language in use, which constitute part of native speakers' discourse-based knowledge of their language. These general patterns include:

- Subjects in Japanese are usually marked by *wa* or *ga.*
- The particle *wa* can be used to mark topics (and/or subjects), or to indicate contrast.
- The particle *ga* can indicate newness, or can mark subjects.
- Subject argument-marking particles may be omitted.
- Subject arguments are often left unexpressed.
- The intended referents of unrealized subjects can usually be inferred from context.

- New subjects are likely to be realized; unrealized subjects are likely to be given.
- Contrastive subjects are likely to be realized.

As mentioned in Chapter 1, second-language learners have been shown to be sensitive to frequencies of linguistic expressions and their (syntactic/social/pragmatic etc.) contexts of usage (Ellis 2002; Ellis & Ferreira-Junior 2009). Native speakers have already built up a knowledge of such frequencies through their experience in and exposure to conversational discourse; this knowledge can itself be viewed as "grammar."

The goal of this analysis is to compare the usage of Japanese L2 learners with that of native Japanese speakers to investigate how the positive evidence from conversation through interaction with native speakers helps language learners acquire a discourse-based grammar. Native speakers' realization of subjects in Japanese is based on many nuanced discourse-pragmatic factors; non-native speakers, particularly those with less experience speaking conversational Japanese, may not be fully sensitive to all of these nuances. In addition, Japanese learners who are L1 speakers of languages such as Chinese and English may find the particular aspects of spoken Japanese on which this analysis is based to be especially challenging, whereas they may come more easily to native Korean speakers, whose language shares many of the same discourse-pragmatic-based features.

In this chapter I will investigate the factors influencing subject realization patterns of native versus non-native speakers of Japanese, to assess whether the same discourse-pragmatic factors are influencing native speakers' versus learners' choices of whether to realize subject arguments or not.

My assumptions are that native speakers' patterns of subject realization are influenced by discourse-pragmatic factors such as **givenness** and **contrast**, and that non-native speakers can only demonstrate identical sensitivities to such discourse-pragmatic

factors if exposed to native-speaker-like frequencies of use in conversational interaction. The testable hypothesis that follows from these assumptions is that the more non-native speakers have engaged in conversation with native speakers, the more closely their usage (and the discourse-pragmatic factors that influence it) should mirror that of native speakers. I will test this hypothesis, despite the lack of longitudinal data available for this research, by using a mixed-effects model, which has two advantages over other regression models: 1) it takes into consideration the fact that each speaker contributes multiple data points; and 2) it is better able to handle un-equal cell frequencies. Through a comparison of subject realization in the conversation of native speakers, more advanced non-native speakers, and less advanced speakers**,** this model will also allow for an analysis of the extent to which the conversational grammars of non-native speakers exhibit the same relationships between grammatical form and discourse function as those of native speakers.

The main variables I will investigate, which will be explained in more detail in Section 5.4.1. below, are the following:

1. A dependent variable: whether or not the subject of each clause is realized (SUBJREAL)
2. An independent variable: whether or not the subject is contrastive (CONTRAST)
3. An independent variable: the newness/givenness of the subject referent (GIVENNESS)
4. An independent variable: whether the speaker is a native speaker or an L2 learner (SPEAKERTYPE)

In addition to the regular predictors above, I also included random effects based on the identity of the individual speaker (SPEAKERID).

In the following section, I describe the coding relevant for this analysis, before returning to a detailed description of the variables, methodology, and analysis.

5.3. Coding

The coding of the various variables relevant for this analysis all centered around the grammatical argument of subject and various discourse-pragmatic factors related to the subject role.

For the dependent variable—whether or not the subject of each clause is realized (SUBJREAL)—each complete clause (containing, at minimum, a predicate) was coded either "yes" or "no" for whether or not a realized subject was present. For those clauses that were coded "yes" (clauses that did have realized subjects), I further made note of the case-marking particle, if any, that was used to mark the subject argument. For example:

- Verbal predicate clause coded as SUBJREAL:*YES*, with subject marked by *ga*:

(20) 10-JE NJS (IU 45)
Ryouhei-to *kurasumeeto-ga* *minna* *shinjite-ite,*
Ryouhei-COM classmate-NOM everyone believe-PROG
'Ryouhei and all his classmates believe ((in) it)'

- (Two) verbal predicate clauses, each coded as SUBJREAL:*NO*:

(21) 11-JE NNS (IU 449)
nanka *mou* *setsumei* *deki-nai* *kedo* *wakaru* *deshou?*
DM DM explain be.able.to-NEG but understand IUFP
'like (I) can't explain it, but (you) get it, right?'

- Nominal predicate clause coded as SUBJREAL:*YES*, with subject marked by *ga*:

(22) 18-JK NJS (IU 220)
kyou-ga *shimekiri* *de,*
today-NOM deadline COP
'today's the deadline, so/and,'

- Nominal predicate clause coded as SUBJREAL:*NO*:

(23) 3-JK NJS (IU 569)
dakara *tomodachi.*
DM(COP-because) friend
'(that)'s why (we're) friends.'

- Adjectival predicate clause coded as SUBJREAL:*YES*, but with no subject case-marker:

(24) 1-JC NJS (IU 691)
Kyouto *yosa-sou* *janai?*
Kyoto good-EVI COP.NEG
'wouldn't Kyoto be good?'

- Adjectival predicate clause coded as SUBJREAL:*NO*:

(25) 8-JE NNS (IU 658)
chotto *mezurashi-katta.*
a.little unusual-PST
'(it) was a little unusual.'
[Referring to an American's ordering steak without sauce.]

5.3.1. Identifying the Subject

As pointed out by Ono and Thompson, for some predicates whose subjects are not realized, it is impossible to identify a particular referent as the intended subject; this is sometimes—though not always—due to predicates being part of "fixed expressions with different degrees of lexicalization" (1997: 485). For any predicates for which I could not identify a particular referent as the subject, I labeled that clause as "uncodeable" (and did not code it for GIVENNESS or CONTRAST, as described below). For example, the following two clauses were coded as having a non-realized subject, and were marked as "uncodeable" with respect to GIVENNESS and CONTRAST, because a particular intended referent for the subject could not be identified.

(26) 19-JC NNS (IU 1038)
maa *mou* *hitori-no* *Ryuu-san-ni* *yoru-to,*
well another one.person-GEN Ryuu-DAT ask-COND
'but according to Ryuu-san (/if [you] also ask Ryuu-san),'

(27) 25-JE NNS (IU 501)
muzukashii.
difficult
'(Something is/that's) difficult.'

Some scholars have analyzed certain types of expressions as "subjectless" (Kuno 1973: 33). For example:

(28) *ame* *da* 'it's raining'
rain COP

Such structures could also be found in my data, as in the following two examples:

(29) 25-JE NJS *tetsu* *da* *toka.*
(IU 516) iron COP for.example
'like iron for example.'

(30) 25-JE NNS *tabun* *jikan* *desu* *ka?*
(IU 1137) maybe time COP Q
'is (it) maybe time? [is the recording time over?]'

I treated these types of clauses the same as those for which one particular subject was not identifiable: these were also marked as uncodeable for GIVENNESS and CONTRAST.

Deontic conditional constructions (Clancy et al. 1997), such as *tabecha dame* 'if (you) eat it, it's bad' (i.e., 'don't eat it'; 'you shouldn't eat it') were treated as two separate clauses due to evidence for the flexibility of what types of constructions can appear in place of *dame* 'bad' (e.g., in this example, *dame* could be replaced by an independent verbal-predicate clause). However, with respect to the present issue of identifying the subjects of each clause in order to code them for GIVENNESS and CONTRAST, only the first part of the deontic conditional was treated as having a subject (the 'eater' in the case of *tabecha dame*); the second clause was treated as subject-less, and was thus marked as uncodeable. This applied to all deontic conditionals, including those with *ikenai* in place of *dame*, such as *yuttara ikenai_[akan]* 'if (you) say it, it's bad' (i.e., 'don't say it'; 'you shouldn't say it'): in this case, the verb *yut-tara* 'say-COND' was treated as having a subject (the 'sayer'), while *ikenai* 'bad' was treated as subjectless.

The "stative-transitive" predicate type of *-wa*/*-ga* structure described in Section 5.1.1. above presented a particular challenge in determining what argument I would code as the "subject." While some have analyzed the *ga*-marked argument in these types of constructions as a grammatical object (Kuno & Johnson 2005), as an analogical comparison to English translations might imply, others have noted that if such predicates are in fact transitive, then they are restricted to clauses of very low transitivity (Hopper and Thompson 1980; Sugamoto 1982; Ono et al. 2000).

In "stative-transitive"-type clauses with verbal predicates, I chose to view either of the two "nominative-marked" noun phrases, i.e., either the experiencer or the thing experienced (Iwasaki 2002: 224), as having the potential for subjecthood. Thus, if a *wa*- (or *ga*-) marked experiencer was present, it was coded as the subject (see example (31) below, in which *wa*-marked *Edo-chan* is the subject—although a second argument, *nihongo*, which could potentially have been marked by *-ga*, is also present). If no topic was expressed in clauses with verbal predicates in either potential or desiderative forms, the typically *ga*-marked argument of the stative-transitive predicate, if present, was coded as the subject (see example (32), in which *nani* is the subject). (I view these clauses as having very low transitivity—they are essentially intransitive—in much the same way that I view the (often *ga*-marked) arguments of the verbs of existence *aru* 'exist.inanimate' and *iru* 'exist.animate' as intransitive subjects).

In "stative-transitive"-type clauses with adjectival/nominal predicates such as *suki* 'like' or *jouzu* 'good.at', if a *wa*-marked experiencer/topic was present, it was coded as the subject; however, if no such experiencer was expressed, the clause was coded as having a non-realized subject (see example (33), where *are* 'DIST'—though marked by *-wa* rather

than -*ga*—is not coded as the subject because it is the thing that was liked, rather than the one who did the liking).

(31) 16-JE NJS (IUs 1014-1015)
Edo-chan-wa,
Edo-DIM-TOP
nihongo *hanas-e-ru* *no?*
Japanese speak-POT-NPST IUFP
'Can Edo-chan speak Japanese?'

(32) 8-JE NJS (IU 499)
...nani-ga *tabe-tai* *ka* *wakar-anai* *no*
what-NOM eat-DES Q understand-NEG IUFP
'(I) don't know what (it is that) (I) want to eat.'

(33) 11-JE NNS (IU 940)
are-wa *suki* *da-tta.*
DIST-TOP like COP-PST
'(I) liked/used to like that.'

I also coded the differential use of the verb *wakaru* 'to understand'. This verb most often occurs in the "stative-transitive" predicate type construction, for which I followed the same coding guidelines as given above, viewing either the *wa*-marked or *ga*-marked elements as possible subjects. However, in clauses with *wakaru* 'to understand', I found that the element that typically is *ga*-marked in other "stative-transitive" predicate clauses was not consistently marked only with *ga* before a *wakaru* predicate. In the following examples, the typically-*ga*-marked element in this type of construction is marked with *ga*, *tte*, *ka*, and *wa,* respectively:

(34) 24-JE NNS (IU 889)
demo *imi-**ga*** *wakar-u?*
but meaning-NOM understand-NPST
'But (you) understand what I mean?'

(35) 24-JE NJS (IU 1006)
dochi-no *eigo-ga* *ii* ***tte*** *wakar-u?*
which-GEN English-NOM good QUOT understand-NPST
'Can you say for sure which (of two students') English is better?'

(36) 10-JE NJS (IU 1071)
ake-ta ***ka*** *wakar-anai* *ka.*
open-PST Q understand-NEG Q
'(You) don't know whether or not (he) opened (it), huh.'

(37) 16-JE NNS (IU 1009)
*kekka-**wa*** *wakar-anai* *kedo,*
results-TOP understand-NEG though
'(I) don't know the results though.'

Furthermore, the arguments coded as "subjects" of *wakaru* fell into two broad semantic categories (coded as either "wakaru-1" or "wakaru-2"). I treated wakaru-1 and wakaru-2 as separate lexemes, each having a different type of semantic subject: the subjects of wakaru-1 are themes, while the subjects of wakaru-2 are experiencers. The clauses in (34) through (37) above are all examples of "wakaru-1:" clauses with very low transitivity (or intransitive clauses) whose subjects are 'that which is understood (or not understood)', analogous to a passive use of *understand* in English. In contrast, the clauses in (38) through (41) below represent examples of "wakaru-2" clauses, which are slightly more transitive and whose subjects are 'the person who understands (or does not understand)'.

(38) 1-JC NJS (IU 716)
wakar-imashi-ta.
understand-POL-PST
'(I) see.'

(39) 1-JC NNS (IU 883)
hai *wakar-u.*
yes understand-NPST
'yes, (I) see.'

(40) 24-JE NJS (IU 388)
nihonjin *wakar-anai.*
Japanese.people understand-NEG
'(even) Japanese people don't understand (it).'
[referring to Okinawa's dialect]

(41) 24-JE NNS (IU 1163)
hotondo-no *hito-ga* *wakar-anai.*
most-GEN people-NOM understand-NEG
'most people don't understand (it).'
[referring to British English accents]

Not all occurrences of *wakaru* fell so neatly into one of these two categories, however. Interestingly, the following example (42) has both types of arguments, and they are marked by *-ga* and *-wa* rather than the more typical order of *-wa* and *-ga*; this is partially because the second element (not the subject or topic—it has not been mentioned in the discourse before) is being contrasted, and is thus marked by *–wa*. That which is understood is marked as a contrastive element by *-wa* whereas the understander is marked as the subject by *-ga*.

(42) 25-JE NJS (IUs 505-506)

maa %Jake-ga,
well Jake-NOM

sugoku kyoumi-no aru bubun-wa waka-tta.
very interest-GEN exist area-TOP understand-PST
'well but you (Jake) do understand (vocabulary in) the areas that you're very interested in.'
[referring to his limited Japanese vocabulary]

The contrasted element here is neither the subject nor the topic, so this clause was coded as non-contrastive; the argument *Jake* was coded as the subject.

5.3.1.1. Double subject constructions

Japanese also has double subject constructions in which two *ga*-marked arguments may co-occur in a sentence. It is arguable whether the resulting construction is best viewed as a single clause or as two concentric clauses. Iwasaki (2002: 103) has analyzed such constructions as containing an "inner clause" inside the "full clause." (Note that this is distinct from a main clause/subordinate clause type of structure found in other languages, because both *ga*-marked NPs here are arguments of the same single predicate, although the inner clause itself could also be viewed as the predicate of the full clause.)

(43) [**SUB**-*ga/ni* [sub-*ga* Pred.]]
|----------|
Inner clause
|==========|
Full clause

Reproduced from Iwasaki (2002: 103)

In such cases, if both subject arguments were realized, the "full clause" subject was treated as the subject. (Cases in which only the "inner clause" subject was realized were of course indistinguishable from the more prototypical single-subject clauses.) If neither subject was realized, the subject was marked as not-realized, but the referent (which was coded for GIVENNESS and CONTRAST, as explained below) was interpreted as being whichever of the two possible subjects had been most recently referenced in the preceding clauses.

5.3.1.2. Subjects marked with particles other than *wa* (TOP) and *ga* (NOM)

The majority of Japanese grammatical subjects—if expressed—are either marked with *wa* or *ga* (or not case-marked at all, as discussed above); these three most frequent possibilities (*wa*, *ga*, or no particle) account for 87.3% of native speaker subjects and 87.1% of non-native speaker grammatical subjects. However, it is possible for other particles to appear in the case-marking position following a subject argument, e.g., the *ni*-marked subject of the full clause in double subject constructions schematized above in (43).

The following is a complete list[31] of all other particles observed to mark subject arguments in my data, as well as explanations of these particles.

- *mo*: This particle is used to mean 'also', 'both', or in some cases, 'neither' (Johnson 2008: 71). When *mo* is used to mark a topic or a subject, it replaces either *wa* or *ga*.

- *tte*: This particle is a casual-register quotative morpheme that also serves other functions: it is often used as a topic-marker or as an utterance-final pragmatic particle (Suzuki 2007). When *tte* is used to mark a clause-initial argument, it indicates that the argument is the topic; however, in contrast to *wa*, this topic-marking *tte* functions to introduce a noun phrase that is unfamiliar to either the speaker or the hearer (Suzuki 2007).

- *ka*: This particle is an interrogative marker, as well as the word for 'or'. However, when used to mark a subject argument, it suggests a meaning of 'or' or 'for example'.

[31] This table gives all of the particles used to mark subjects in my data, as well as their relative frequencies.

Subject-marking Particle (for realized subjects)	**Number of Clauses (NJS)**		**Number of Clauses (NNS)**	
ga	288	(32.73%)	263	(31.92%)
[no particle]	270	(30.68%)	210	(25.49%)
wa	210	(23.86%)	245	(29.73%)
mo	68	(7.73%)	73	(8.86%)
tte	29	(3.30%)	9	(1.10%)
ka	6	(<1%)	7	(<1%)
toka	4	(<1%)	4	(<1%)
shika	1	(<1%)	6	(<1%)
de	1	(<1%)	4	(<1%)
nanka	1	(<1%)	1	(<1%)
dake	0	—	1	(<1%)

- *toka*: This particle means something like ‘or’, ‘for example’, or ‘among other NPs’, and is often used with a linear sequence of multiple arguments in a listing function, perhaps without the production of a predicate to create a complete clause. Arguments marked with *toka* were coded as subjects when only one such argument appeared and was followed by a predicate. In such cases, *toka* was seen as an alternative for either *wa* or *ga*.

- *shika*: This particle means ‘only’ with a negative connotation of ‘not enough’ or ‘less than expected/desired’; when used, it replaces *wa*, *ga*, or *dake* (see below), and is used in conjunction with a negated predicate (Johnson 2008: 240-241).

- *de*: This particle, normally glossed as a locative case-marking particle, can also be used to mark subject in a very specific grammatical construction: subjects marked with *de* are usually part of the fixed expression *de(mo) ii* (Ono and Thompson 2009), with the conventionalized meaning that the subject ‘is enough’, ‘is sufficient’, or ‘will do’.

- *nanka*: This particle is a discourse marker that resembles “like” in English in its semantic emptiness and syntactic flexibility. When used as a subject marker, it functions similarly to *toka* in indicating ‘something like’ the subject, or marking the subject as an ‘example’ of something.

- *dake*: This particle, like *shika*, can be translated as ‘only’ in English, but it does not share the negative connotation of *shika*; rather, it is more objective (Johnson 2008: 241).

5.3.2. Coding for Givenness

For the independent variable of GIVENNESS, I assigned each subject referent a ratio-scaled value along a scale from 0-10, representing the distance to its last mention/reference (with 0 being NEW and 10 being GIVEN). In other words, for the subject of every clause, whether overt or not, I first assessed whether that referent was referred to—through overt mention or not—in the preceding discourse.[32] This follows other scholars' treatments of coding referential distance, most notably Givón's proposal of the 'look-back' coding device for which he imposed an arbitrary upper bound of 20 clauses, rather than 10 (1983: 13).

Each clause was then coded as follows:

- coded with "10" if the subject referent was referred to in the previous clause (i.e., these subjects were considered to be GIVEN.)
- coded with "9" if the subject referent was most recently referred to 2 clauses back
- coded "8" " 3 clauses back
- coded "7" " 4 clauses back
- coded "6" " 5 clauses back
- coded "5" " 6 clauses back
- coded "4" " 7 clauses back
- coded "3" " 8 clauses back
- coded "2" " 9 clauses back
- coded with "1" if the subject referent was most recently referred to 10 clauses back
- coded with "0" if the subject referent was most recently referred to more than 10 clauses back, or for a first mention (i.e., these subjects were considered to be NEW.)

Although this system positions GIVENNESS as a ratio-scaled variable, for the purposes of simplification and discussion, I will not view GIVENNESS as a matter of degree. Rather, those subject referents coded with "0", I will take to be "**new**"; those coded with "1-10," I

[32] As Iwasaki has noted, when subjects are not realized in discourse, this is because their referents are "pragmatically retrievable" (2002: 9), in other words, a particular referent can still be "referred to" although it is not overtly "mentioned."

will take to be "not new" (i.e., "**given**"). In other words, I make no distinction here between "given" vs. "(partially) activated".

It is crucial to note that this definition of GIVENNESS was operationalized slightly differently for first- and second-person referents as compared to third-person/inanimate/abstract referents. Because the data used in this study were entirely composed of two-person conversational interactions that took place in person, I viewed first- and second-person referents as having the unique status of always being "given" due to their presence in the visual/interactional context throughout the conversations. Therefore, I coded every first- and second-person subject referent with a "10" regardless of whether that referent was mentioned/referred to in the previous clause, 5 clauses back, or more than 10 clauses back. (For this reason, neither uses of first-/second-person pronouns nor uses of vocatives within the previous 10 clauses had any effect on the GIVENNESS values of first-/second-person referents.)

Additionally, an instance of a referent being "referred to" did not have to occur with an overt mention. For example, in (18), reproduced from above, the full clauses would be coded as follows (1-7 are the line numbers; while the 0, 10, and 9 are the GIVENNESS values):

(18) 1-JC NJS (IUs 778-785)

1	**0**	*oneechan-ga*	*i-ru*	*kedo,*	
		older.sister-NOM	exist-NPST	but,	
		'(I) have an older sister but,'			
2		*oneechan,*			
		older.sister			
3		*Yamanashi-ni,*			
		Yamanashi-LOC			
4	**10**	*maa*	*shigoto-de*	*itte-i-ru,*	
		well	job-OBL	go-PROG-NPST	
		'well my sister's in Yamanashi for work.'			
5	**10**	*mou*	*kaetteku-ru* --		
		anymore	return-NPST		
		'(she) comes home--'[33]			
6	**10**	*hontondo*	*kaetteko-nai*	*to*	*omo-u,*
		mostly	return-NEG	COMP	think-NPST
		'(she) mostly doesn't come home anymore, (I) think.'			
7	**9**	*koumuin*	*ya*	*shi*.	
		civil.servant	COP	IUFP	
		'because (she) is a government employee.'			

In this example, the older sister referent is brand new to the discourse in line 1, and is thus coded with "0". The next full clause is completed in line 4, where the older sister is once again the subject; because this referent was just mentioned in the previous clause, it is coded as "10". The same reasoning holds for the clauses in lines 5 and 6. However, line 6 actually contains two clauses: *hontondo kaetteko-nai* '(she) mostly doesn't return'—of which the older sister is the subject—and *to omou* '(I) think'—of which the speaker is the first-person subject. The clause *to omou* is coded with its own GIVENNESS value of "10"

[33] Although line 5 of this example comprises a truncated intonation unit—which is restarted in the subsequent line—this type of utterance was still considered to be a clause and was coded for subject, as long as the speaker uttered the predicate. (Other truncated utterances, such as adverbial phrases or NPs without predicates—as in lines 2 and 3 of this example—were not considered to be clauses, but were marked as non-propositional and were not coded for subject.)

(not shown here) because I consistently assume all first- and second-person referents to be given. Returning to the last line of the example, line 7, the subject of this clause is once again the older sister, which has been referenced not in the immediately preceding clause (*to omou* '(I) think') but in the one before that (*hontondo kaettekonai* '(she) mostly doesn't return'); it is thus coded with a "9" rather than a "10". Note that when counting back to find the previous references/mentions, the overt mention of the older sister referent with a noun phrase in line 1 is treated in the same way as the non-overt references to the older sister referent in lines 4 and 5.

Likewise, if a referent was overtly mentioned—but not in a clause, e.g., as a stand-alone noun phrase—this was also counted as an instance of the referent being "referred to". In assigning a GIVENNESS value to the subject of a subsequent clause, the stand-alone NP was counted as the next clause prior to its occurrence; however, the referent of the stand-alone NP was not itself coded for GIVENNESS. In the following example, the speaker has been listing several cities (which she originally considered when deciding where she would attend Japanese language school before moving from China to Japan). The speaker lists several places in stand-alone NPs, which are not counted as clauses, and are therefore not themselves coded. In line 6, the subject referent of the full clause (*Kyouto*) has not been introduced into the discourse prior to line 2; however, because of its occurrence in line 2, it is not taken to be completely new to the discourse in line 6 (it is not coded with "0"), but rather coded as "10" (because there are no intervening full clauses between lines 2 and 6).

(44) [Recording: 1-JC, IUs 625-630]

NNS	1		*Hokkaidou*	*ka,*	
			Hokkaido	or	
NNS	2		*Kyouto*	*ka,*	
			Kyoto	or	
NJS	3		*un.*		
			'yeah'		
NNS	4		*Oosaka?*		
			Osaka		
NJS	5		*un.*		
			'yeah'		
NJS	6	**10**	*Kyouto*	*yosa-sou*	*janai?*
			Kyoto	good-EVI	COP.NEG
			'wouldn't Kyoto be good?'		

Finally, as mentioned above, when the subject of a clause was not realized and the intended referent was not identifiable, I marked that clause as "uncodeable". When coding for GIVENNESS, I used one of three possible labels to categorize the uncodeable clauses:

- "rel" for subject referents that were uncodeable because the subject was "relativized" as the head noun of a GNMCC (generalized noun-modifiying clause construction; see Chapter 4).
- "generic" for subjects that were uncodeable because the subject was generic and thus could not be coded as either GIVEN (i.e., not new) or NEW.
- "uncodeable" for otherwise uncodeable subject referents (e.g., evaluative adjectival predicates with no specific identifiable subject referents).

5.3.3. Coding for Contrast

For the independent variable of CONTRAST, each clause was coded either "yesC" or "noC" for whether the subject/topic was contrastive or not. Identifying contrast proved to be challenging because contrast is extremely dependent on discourse context.

Whereas some *wa*-marked NPs act as topics, two *wa*-marked NPs in two clauses in a row leads each of those clauses to have a contrastive structure (Iwasaki 2002: 244).

(45) 16-JE NJS *de* *hitori-wa* *tabete-i-mashi-ta.*
(IU 578) and one.person-TOP eat-PROG-POL-PST
'so one person was eating.'

hitori-wa *matte-i-mashi-ta.*
(IU 579) one.person-TOP wait-PROG-POL-PST
'another(/one) person was waiting.'

In this example, reproduced from above, *both* clauses are coded as having contrastive subjects; a contrastive structure "assumes at least two propositions" (Iwasaki 2002: 243).

Furthermore, contrastive propositions may be—but are not necessarily—indicated by a contrastive discourse marker (either in clause-initial or clause-final position), such as *demo* 'but', *ga* 'but', or *kedo/keredomo* 'though'. Contrastive propositions may further be—but are not necessarily—indicated by an affirmative/negative polarity contrast between clauses (Iwasaki 2002: 244). For this study, however, I did not code for "propositional contrast," meaning instances where the entire clause is contrasted with another proposition, rather than one particular element in the clause being marked as contrastive (Kuno 1973: 46-47). I coded only for contrastive subject/topic arguments (rather than contrastive object arguments or propositional contrast), i.e., only for when two

or more subjects/topics were being contrasted with each other, usually with respect to the same predicate. For example, both of the following clauses were coded as contrastive because of the affirmative/negative polarity contrast of only one particular element in each clause against the other (this is not an example of propositional contrast because both clauses have the same predicate).

(46) 1-JC NJS (IU 84)

nanka	*kekkou*	*shaber-u*	*ko*	*mo*	*i-tari,*
DM	quite.a.bit	speak-NPST	kid	too	exist-REP

'like there are students who speak quite a bit, and,'

shaber-e-nai	*ko*	*mo*	*i-tari*	*shite,*
speak-POT-NEG	kid	too	exist-REP	light.verb

(IU 86) 'and there are also students who can't speak.'

As mentioned above, topicalization and contrastiveness may apply to the same noun phrase (Iwasaki 2002: 245). In such cases, the argument in question is a "contrastive topic" (and was coded as contrastive). For example, the following (subjectless) clause was coded as contrastive because it has a contrastive topic (it is not an example of propositional contrast, because only one element is contrastive):

(47) 2-JK NJS (IU 968)

Non-chan	*toka-wa*	*nani-ni*	*shi-you*	*kana?*
Non-DIM	etc.-TOP	what-OBL	do-VOL	IUFP

'(but) for Non-chan and them what should (we) do?'
[meaning, what should (we) get for them (as a souvenir).]

However, when a clause has two *wa*-marked NPs, the first is the topic, and the second is the contrastive argument (this may be a contrastive object); these cases were therefore not coded as an occurrence of a contrastive subject/topic. For example, in the following clause, the contrasted element is not the topic or a subject, but a dative-marked argument; this clause was therefore not coded as having a contrastive subject.

(48) 10-JE NJS (IU 806)

onaji	*youna*	*kibishii*	*koto-wa*	
same	type	strict	things-TOP	
chichioya-ni-wa		*iwa-nai-n*	*desu*	*yo.*
father-DAT-TOP		say-NEG-IUFP	COP	IUFP.

'(one) wouldn't say the same kinds of harsh things to the father.'

Certain specific Japanese constructions encode contrastiveness, even without the discourse context of an overt accompanying clause. For example, the use of the following construction itself expresses a contrast:

(49)

[_____](-*no*)	*hou-ga*
[subject]-GEN	direction-NOM
'more (than)'	

Therefore, subjects of the construction *(no) hou ga* were coded as contrastive. For example, the following clause was coded as contrastive because of the occurrence of the *(no) hou ga* construction; the speaker was talking about what types of baby clothes would be best to buy for a baby that had not been born yet. (Note that this is an example of a clause without a realized subject that was nevertheless coded as contrastive.)

(50) 8-JE NJS (IU 889)

ookii	*hou-ga*	*ii*	*to*	*omo-u,*
big	direction-NOM	good	QUOT	think-NPST

'(I) think bigger (ones) are better.'

The same principle was applied to clauses in which the *yori* 'compared to' construction occurred. For example, the following clause was coded as contrastive:

(51) 7-JE NJS (IU 270)

kanojo-wa	*ne,*		
she-TOP	IUFP,		
kare	*yori*	*tsuyoi*	*de-shou.*
he	compared.to	strong	COP-IUFP

'she's stronger than he is.' [at drinking alcohol]

Finally, as with the other coding categories, when the subject of a clause was not realized and the intended referent was not identifiable, I marked that clause as "uncodeable".

5.4 Subject Realization: Statistical Analysis

In this section, I present a statistical analysis of the factors influencing the subject realization patterns of native versus non-native speakers of Japanese. I used a mixed-effects model, which allows for an examination of the behavior of individual speakers, rather than only the behavior of the group of native speakers versus the group of non-native speakers (which is a limitation of a more basic model such as a binary logistic regression). Moreover, a mixed-effects model crucially allows the results to be generalized to the population at large, in contrast to a fixed-effects model, which would not. In other words, my goal is not solely to describe the individual differences among the 12 native speakers and 12 non-native speakers of Japanese who happen to be my subjects for this dataset; rather, my goal is to be able to generalize the results to a larger population of native speakers or non-native speakers. Thus, the individual differences among these 24 participants need to be modeled as "random," i.e., randomly chosen representatives of a larger population, which is exactly what the mixed-effects model does.

In the following sub-sections, I will first outline the relevant variables, then present the hypotheses and a preliminary exploration of the data. Next, I will explain the model selection process in a methods section, before giving the results (which include both a fixed effects exploration and a mixed-effects exploration). Finally, I will summarize and examine the implications of the results in the discussion section.

Before proceeding to the next section, I will give a basic explanation of the statistical processes that will be described below.

The statistical model selection process—which seeks to arrive at a model that best fits, predicts, or describes the data—starts by considering the effects of the independent variables and of their interactions on the dependent variable. For this analysis of subject realization, I will consider the effects of the following factors on the dependent variable SUBJREAL or whether speakers expressed the subject of each clause or not.

1) each of the independent variables (GIVENNESS, CONTRAST, and SPEAKER),
2) each of their two-way interactions, and
3) their three-way interaction

The model selection process begins with checking to see which of these factors does NOT have a significant effect on the dependent variable (SUBJREAL). Any factors with a p-value of 0.05 or higher (meaning they are not significant) are eliminated, one-by-one, from what will become the final model. After each non-significant factor is eliminated from the model (thus creating a new model), the new model is then checked against the previous model with a likelihood ratio test to ensure that the new model is not significantly worse than the previous model at fitting the data (having removed that single non-significant factor). Once again, a p-value of 0.05 or higher means there is no significant difference between the two models.

The model selection process described thus far could apply to more basic models, such as binary logistic regressions. A mixed-effects model—which I used for this analysis—requires one additional step.

In mixed-effects models, intercepts and slopes of predictor variables can be made subject specific. The premise is that speakers have been randomly sampled from a larger population: no significance tests are made between individual speakers within the model (there are no p values for random intercepts), but the results can be generalized to the population at large. (This contrasts with a fixed-effects model, which would yield results only about the particular speakers participating in the study, without generating results that could be generalized to a larger population.) Each speaker is assigned a random intercept and a random slope for GIVENNESS, for CONTRAST, and for their interaction.

To carry out the model selection process for a mixed-effects model, the first task is to find the optimal "random effects structure." All of the effects listed above (those of each independent variable and those of all of their interactions) are "fixed effects." Prior to considering these fixed effects, we must first consider the random effects (the random intercepts and slopes assigned for each SPEAKERID to GIVENNESS, CONTRAST, and their interaction).

In other words, the model selection process must be carried out in two stages (Zuur et al. 2009): first for the random effects, eliminating the non-significant effects one-by-one, and checking to make sure that the new model is not significantly worse than the previous model (otherwise returning to the previous model). Following the model selection for the random effects, the model selection process is again carried out, starting with (the model

arrived at through the random effects model selection, plus) all of the fixed effects listed above.

The final model will contain only those random effects that make a significant contribution to the model and those fixed effects that are significant predictors of the dependent variable (as well as any effects that are part of an interaction which is a significant predictor, and which thus cannot be eliminated). In other words, the independent variables—and their interactions—that remain in the final model will each have a significant effect on speakers' choices of whether to realize the subject of a clause or not.

The results of the final model can be summarized in terms of its classification accuracy, R^2 statistic[34], and C statistic. The classification accuracy is the percentage of correct classifications of the dependent variable (in this case, whether or not a subject will be realized, or SUBJREAL) in all data points in the sample. The C statistic, or concordance statistic, can range between 0.5 (which indicates a discriminating power not better than chance) and 1.0 (indicating a perfect discriminating power); values ≥ 0.8 are usually considered good (Harrell 2001: 248).

[34] An approximate/heuristic R2 was obtained by computing the squared point-biserial correlation between the fitted values of the final model and the observed subject realizations (.374) (Johnson 2008b: 239). This heuristic thus assesses the quality of the final model; it can range between 0 and 1.

5.4.1. Variables

This analysis will focus on the following variables:

1. A dependent nominal variable (whether or not the subject is realized, SUBJREAL) with two possible levels: *YES* for realized subjects and *NO* for unexpressed subjects.
2. An independent nominal variable (whether or not the subject is contrastive, CONTRAST) with two possible levels: *YESC* for contrastive subjects and *NOC* for non-constrastive subjects.
3. An independent ratio-scaled variable (the newness/givenness of the subject referent, GIVENNESS) with eleven possible values (0-10), which indicate how given (or active or familiar) the referent of the subject is based on the distance—in clauses—from the previous mention of the referent: high values (10, 9, 8, etc.) indicate that the referent is given (the referent has been mentioned in the previous clause or only a few clauses back), while lower values down to 1 also reflect givenness despite a greater distance to last mention (the referent has been mentioned up to 10 clauses back; this would yield a value of 1), and a zero value indicates that the referent is new, or was previously mentioned more than 10 clauses back.
4. An independent nominal variable (whether the speaker is a native Japanese speaker or not, SPEAKER) with two possible levels: *NJS* for Native Japanese Speaker and *NNS* for Non-native Speaker.[35]

[35] Although all NNS were proficient enough in Japanese to carry on a 20-minute conversation, their levels varied (see discussion of the speakers' abilities with respect to the ACTFL Proficiency guidelines in Chapter

In addition to the regular predictors above, I also included random effects based on the identity of the individual speaker (SPEAKERID). The present analysis is based on data from 12 recordings, each of which comprises a conversation between a native and a non-native speaker, so there are 24 individual speaker IDs.

5.4.2. Preliminary exploration of the data

The following table shows the distribution of clauses with realized (versus non-realized) subject arguments (SUBJREAL), depending on whether the speaker is a Native Japanese Speaker (*NJS*) or Non-Native Speaker (*NNS*), and depending on whether the subject was contrastive or not (CONTRAST).

		SUBJREAL		
SPEAKER	CONTRAST	*YES*		*NO*
NJS	*NOC*	741	(23.6%)	2404
NJS	*YESC*	95	(80.5%)	23
NNS	*NOC*	671	(26.4%)	1871
NNS	*YESC*	127	(86.4%)	20

Table 5.1. Exploration of the Data: CONTRAST

Table 5.1 suggests a likely strong effect of CONTRAST on SUBJREAL among both native and non-native Japanese speakers: in non-contrastive contexts, fewer arguments are realized than in contrastive contexts. A similar pattern—in terms of the effect of CONTRAST—seems to hold regardless of SPEAKER type, although the native speakers produced more clauses in total than the non-native speakers.

The following figure shows the distribution of clauses with realized (versus non-realized) subject arguments (SUBJREAL), depending on whether the speaker is a Native

2). However, I did not attempt to precisely quantify or code for NNS' ability in Japanese, since adult L2 learners have far too much variation in their experiences with the L2 to control for; instead, I coded for only *NJS* versus *NNS* and allowed the results to reveal differences in the NNS levels, if any.

Speaker (left panel) or Non-Native Speaker (right panel), and depending on the GIVENNESS value assigned to the subject referent (0-10 on the x-axis).

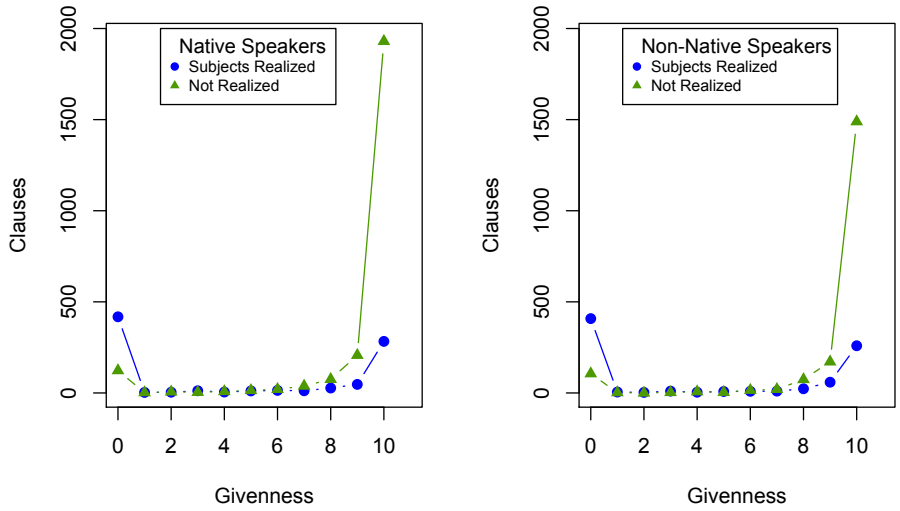

Figure 5.1. Exploration of the Data: GIVENNESS (for data see Appendix 1)

Figure 5.1 suggests a likely effect of GIVENNESS on SUBJREAL among both native and non-native Japanese speakers: more subject arguments are realized when the referent is new (i.e., not given: 0); far fewer subject arguments are realized when the referent has a higher degree of GIVENNESS (i.e., appeared in the previous few clauses: 10, or even 9 or 8). It is difficult to ascertain a pattern among those subject referents that have a lower degree of GIVENNESS (those that appeared 6-10 clauses back: 1-4) because there were so few examples of these in the data. A very similar pattern—in terms of the effect of GIVENNESS—seems to hold regardless of SPEAKER type.

5.4.3. Methods

The model selection process for a mixed-effects model involves first finding the optimal random effects structure, then continuing with model selection to see which fixed effects are part of the final model.

The first model (Model 1a) was fit with REML (restricted maximum likelihood estimation) estimates and included the following:

- random effects: random intercepts and slopes for GIVENNESS and CONTRAST and their interaction for each SPEAKERID;
- fixed-effects predictors (1: GIVENNESS, 2: CONTRAST, and 3: SPEAKERTYPE and all of their interactions).

The second model (1b) kept the fixed effects variables, but removed the non-significant interaction of GIVENNESS and CONTRAST from the random effects. A likelihood ratio test showed that Model 1b was not significantly worse ($p=0.5142$), so model selection process proceeded with Model 1b.

Next, two more models were created (1c and 1d), each of which also kept the fixed effects variables, but with only one random effect each. Model 1c had only the random slope and intercept of GIVENNESS while Model 1d only retained the slope and intercept of CONTRAST. According to likelihood ratio tests, each of these two models was significantly worse than Model 1b ($p=0.0033$ and $p<0.0001$, respectively). Therefore, the random effects structure of Model 1b (random effects for GIVENNESS and CONTRAST, but not for their interaction) is the optimal random effects structure.

After the random-effects structure was determined, the model selection process proceeded with ML (maximum likelihood estimation) estimates for identifying the right fixed-effects structure.

The fixed effects included in Model 1b were: GIVENNESS, CONTRAST, SPEAKERTYPE, and all of their interactions. On the basis of likelihood ratio tests, the following predictors were eliminated in a stepwise fashion, creating Models 2-4: the interaction of all three variables (p=0.2987), the interaction between GIVENNESS and SPEAKER (p=0.8742), and the interaction between CONTRAST and SPEAKER (p=0.1548).

Since all remaining predictors in the resulting model, Model 4, are either significant (GIVENNESS, SPEAKER, and the interaction between GIVENNESS and CONTRAST) or part of a significant interaction (CONTRAST), Model 4 constituted the final and minimally adequate model.

5.4.4. Results

The final model has a classification accuracy of 0.845; approximate $R^2 = 0.374$; and C = 0.826. The results of the final model are given in Table 5.2.

	From ML (Maximum Likelihood Estimation)			
Predictor	**Estimate**	**Std Error**	**z**	**p**
Intercept	1.20754	0.12341	9.784	<2e-16 ***
GIVENNESS	-0.33105	0.01580	-20.949	<2e-16 ***
CONTRAST	0.57930	0.33798	1.714	0.0865
SPEAKERTYPE	0.21482	0.09847	2.181	0.0291 *
Interaction (GIVENNESS: CONTRAST)	0.32064	0.03890	8.242	<2e-16 *

Table 5.2. Results of the final model (for corresponding REML results, see Appendix 2)

The final model shows a significant interaction of GIVENNESS and CONTRAST affecting the speakers' choice of SUBJREAL. There is a strong GIVENNESS effect when there is no contrast, *NOC* (as expected: referents that have a higher degree of GIVENNESS are realized less often, while referents that have a lower degree of GIVENNESS or that are new are realized more often); however, when there is contrast, *YESC*, then this GIVENNESS effect disappears: contrastive subject arguments tend to be uniformly realized.

The main effect of SPEAKERTYPE is also significant: there is a slight but significant effect, with non-native speakers (*NNS*) tending to realize their subject arguments at a slightly higher frequency than native speakers (*NJS*) in general (regardless of GIVENNESS or CONTRAST).

5.4.4.1. Fixed Effects Exploration

An exploration of the effect of SPEAKERTYPE on SUBJREAL:*YES* yields the results given in Table 5.3. This table shows the predicted probabilities for realized subjects based on the fixed effect of SPEAKERTYPE (the independent variable of whether the speaker was a native speaker or non-native speaker).

SPEAKERTYPE	*NJS*	*NNS*
	0.2208	0.2599

Table 5.3. Predicted probabilities of SUBJREAL:*YES* for the fixed effect: SPEAKERTYPE

The model predicts that Native Japanese Speakers (*NJS*) will realize subjects with a probability of 22%, while Non-native Speakers (*NNS*) will do so with a slightly higher

probability: about 26% of the time. This relation is illustrated in the left-side plot of Figure 5.2 below.

An exploration of the effect of the interaction between GIVENNESS and CONTRAST on SUBJREAL:*YES* yields the results given in Table 5.4. This table also shows the predicted probabilities for realized subjects, depending on the interaction between two factors: whether or not the subject was contrastive (CONTRAST) and the GIVENNESS value of the subject referent.

	CONTRAST:	
GIVENNESS	*NOC*	*YESC*
0	0.7866	0.8681
1	0.7258	0.8669
2	0.6553	0.8656
3	0.5772	0.8644
4	0.4951	0.8632
5	0.4132	0.8620
6	0.3359	0.8607
7	0.2664	0.8595
8	0.2069	0.8582
9	0.1578	0.8569
10	0.1186	0.8557

Table 5.4. Predicted probabilities of SUBJREAL:*YES* for the fixed effect: the GIVENNESS:CONTRAST interaction

Table 5.4 shows the predicted probabilities of subject realization (SUBJREAL:*YES*) based on the independent variables of GIVENNESS and CONTRAST. When there is *NOC* (no constrast), and when GIVENNESS is 0 (when the subject referent is new), there is a high predicted probability (78.66%) that the subject will be realized. However, as GIVENNESS increases up to 10 this probability steadily decreases, down to only a 11.86% predicted probability of subject realization (for non-contrastive subjects). The interaction between GIVENNESS and CONTRAST is very evident here, because when there is *YESC* (a contrastive subject), then

the predicted probability of SUBJREAL remains steadily around 86%, regardless of the degree of GIVENNESS of the subject referent. This relation is visualized in the right-side plot of Figure 5.2.

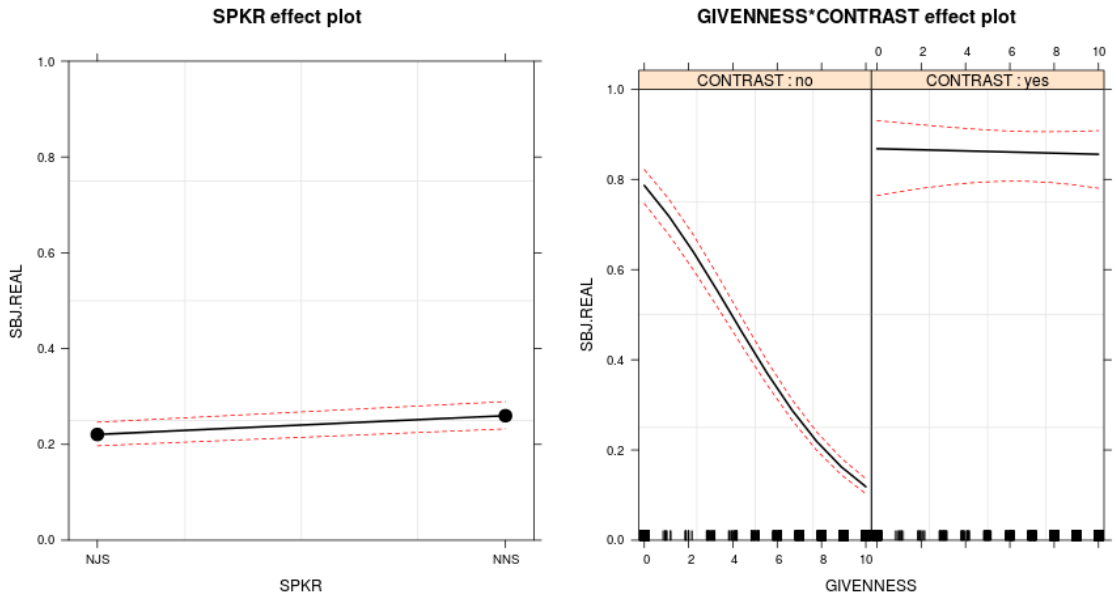

Figure 5.2. Plots of the main effect of SPEAKERTYPE on SUBJREAL:*YES* (left) and the interaction between CONTRAST and GIVENNESS on SUBJREAL:*YES* (right).

Figure 5.2 is a visual representation of Table 5.3 (left side), showing the fixed effect of SPEAKERTYPE; and of Table 5.4 (right side), showing the interaction between CONTRAST and GIVENNESS.

5.4.4.2. Random effects exploration

The model made positive or negative adjustments for each speaker (SPEAKERID) so that the fitted curve better captures that speaker's variation. In general, the absolute size of

adjustments made for each speaker's intercept for CONTRAST were larger than those made for the speakers' intercepts (for SUBJREAL) or their intercepts for GIVENNESS, demonstrating that CONTRAST was the strongest effect (when there is contrast, *YESC*, the GIVENNESS effect disappears, as contrastive subject arguments tend to be uniformly realized regardless of their GIVENNESS values).

A table listing the adjustments to slopes and intercepts of individual speakers is given in Appendix 3. Adjustments of particular speakers are considered in more detail in the following section.

5.5. Discussion

The results reveal a striking similarity between the realization of subject arguments in the conversational discourse of L2 Japanese learners and native Japanese speakers. Critically, the type of statistics used here allow for a comparison not merely of the raw frequencies of realized versus non-realized subjects, but also for an analysis of what independent discourse-pragmatic factors influence native speakers' choices to produce overt subject arguments. Although there was a small yet significant difference between the two groups of speakers in terms of the overall rate of subject realization—with non-native speakers predicted to produce overt subjects about 26% of the time (compared to the 22% of native speakers)—the two groups of speakers as a whole displayed remarkable similarities with respect to which subjects were realized in real-time naturally-occurring conversational discourse based on the discourse-pragmatic factors of CONTRAST and GIVENNESS.

Individual conversational participants from both groups of speakers were shown to be sensitive to whether subject referents were given or new, as well as whether they were contrasted with another referent. Furthermore, participants demonstrated sensitivity not to a binary given/new distinction, but apparently to the ratio-scaled distance to last mention or reference to a referent, operationalized by counting backwards up to 10 clauses. (This notable sensitivity is visualized in the "CONTRAST:*No*" portion of the right side of Figure 5.2, above.) For non-contrastive subjects, the greater the distance to last mention/reference, up to 10 clauses, the more likely a speaker was to produce an overt subject: speakers were likely to produce overt subjects 79% of the time for new referents (score of 0) and 73% of the time for "less" given (i.e., maximally distant) referents (score of 1); in contrast, speakers were only likely to produce overt subjects 12% of the time for "very" given referents (score of 10). These results suggest that GIVENNESS or "newness" is perhaps situated along a continuum, and should be viewed as a matter of degree rather than a strict dichotomy.

It is important to note that the non-native speakers displayed the same sensitivity to GIVENNESS as the native speakers did in their realization of subject arguments (in cases of no contrast). Furthermore, it is crucial to consider that the independent variable of GIVENNESS is highly nuanced and contextual. Based in conversational discourse, GIVENNESS cannot be assessed in clauses removed from their interactional and communicative contexts. Notably, the pattern of subject realization demonstrated by conversational participants was dependent on discourse-pragmatic information related to GIVENNESS that occurred up to 10 clauses back (or perhaps more).[36]

[36] It seems highly unlikely that L2 learners could have been exposed to very many stretches of "natural" discourse of this length in any grammar-focused SLA classroom or program of study (particularly

Moreover, conversational participants from both groups of speakers demonstrated a clear sensitivity to CONTRAST, and were likely to realize subjects about 86% of the time in contrastive clauses. As with GIVENNESS, CONTRAST is highly pragmatic and contextual. Though the discourse-pragmatic device of marking contrastive elements with the topic marker *-wa* is undoubtedly taught in many Japanese L2 pedagogical materials, the particular stochastic frequencies with which subjects are realized in contrastive contexts in casual spoken Japanese is once again something that requires exposure to natural conversational input. Clancy (1985: 377), writing about first language acquisition, summarized it nicely: because pragmatic factors so pervade the grammar of Japanese, the speaker "who masters the syntax and morphology of Japanese has also mastered a subtle pragmatic system for regulating the flow of information to listeners in accordance with their needs in the speech context." For second language acquisition—just as for first—this type of mastery cannot be gained from experience in an L2 classroom alone.

With respect to the small difference shown in overall rates of subject realization among Japanese learners compared to native speakers (non-native speakers realized subjects slightly more often than native speakers in general), it could be argued that such a difference is to be expected based on the differences between Japanese and English, the first language of 8 of the 12 non-native speakers. Indeed, non-native speakers realized their subjects more often than native Japanese speakers, which proved to be a statistically significant result, although with a very small effect. More surprising, though, is how closely the non-native speakers' patterns of subject realization reflected that of the native

---

considering that a stretch of conversational discourse containing 10 clauses may, in fact, contain many more non-clausal NPs and non-propositional intonation units, comprising vocatives, interjections, backchannels, truncations, adverbial phrases, etc.). This is undoubtedly an area for further research. I would hypothesize that such a distribution of native-speaker-like subject realization, based on GIVENNESS, could best be acquired from exposure to and experience with the distribution found in naturally-occurring conversations.

speakers. Moreover—although this was not an independent variable in this particular analysis—the adjustments for each speaker that were the results of the random effects exploration seem to indicate that the non-native speakers' behavior with respect to subject realization did not demonstrate any obvious trends based on the speaker's first language (i.e., it seems that the speaker's first language did not play a role in the individual speaker's decisions to produce overt subjects; see the lack of grouping of JC and JK non-native speakers in terms of the adjustments given in Appendix 3).

This leads to the question of what the random effects exploration results reveals, if anything, about the behaviors of individual speakers. Because I used a mixed-effects model, which incorporates both fixed and random effects, the model allows for an examination of differences among individual speakers. When contrasting adjustments among speakers (as given in Appendix 3), the absolute size of the adjustments is not important compared with other factors, such as whether the adjustments of particular speakers are in the same (either positive or negative) direction and/or whether they group together.

Adjustments for speaker intercepts for SUBJREAL in general, for GIVENNESS, and for CONTRAST, reveal that three of the non-native speakers consistently group together: they exhibit the same 1) tendency (direction—positive versus negative—of adjustment) and 2) they group together in terms of adjustment values compared with other speakers. These are speakers 24, 25, and 26, all three native English speakers, two of whom had only lived in Japan for 1 month each at the time of the recording; the third had lived there for 3.5 years. If we view subject realization, based on discourse factors in conversation, as one indicator of Japanese conversational proficiency, we could take these results as indicating a

natural grouping of these three non-native speakers based on one aspect of their language ability, and as independent evidence for such a distinction (in addition to assessing speakers based on self-reported length of time living in Japan and studying the language). In other words, although all of the non-native speakers as a group displayed very similar patterns of subject realization compared to native speakers, it seems that the individual speaker's amount of time living in Japan and/or amount of experience with naturally-occurring conversation in Japanese played a significant role in that speaker's patterns of subject realization. As discussed in Chapter 2, in the case of second language acquisition among adults, it is difficult if not impossible to carefully control for factors such as experience with and exposure to an L2 either in or outside of a classroom. Nevertheless, assuming that living in Japan (among other circumstances) would definitely contribute to an increased exposure to naturally-occurring conversation, these results demonstrate that the subject realization patterns of the three speakers who had lived in Japan for the shortest amounts of time (out of the 12 non-native speakers) differed from those of the more experienced non-native speakers, whose behavior with respect to subject realization more closely mirrored that of native speakers.

Given the limited and non-longitudinal data available for corpus research on naturally-occurring casual Japanese interactions between native and non-native speakers, the methodological choices for this study were also limited. I would argue, however, that the significant findings of the analysis in this chapter justify the use of this methodology, and have yielded results that can serve as an objective measure of non-native speakers' language ability, defined with respect to how closely their production mirrors that of native speakers. From a theoretical perspective, the results provide strong support for the view

that frequencies of usage associated with discourse-pragmatic factors make up part of the discourse-based grammar of native speakers of Japanese. By extension, it seems safe to conclude that non-native speakers cannot acquire such native-like patterns of usage through limited and focused classroom language use alone, but only through additional experience with language embedded in a communicative context: exposure to the positive evidence of naturally-occurring conversational interaction.

Chapter 6: Conclusions

6.1. A discourse-functional approach to L2 acquisition

This dissertation has sought to address the question of how conversation with native speakers helps language learners acquire a discourse-based grammar mirroring that of native speakers. I have taken a discourse-functional view of native speaker competence, making the assumption that grammar is usage-based and that frequencies and contexts of use are part of what constitutes grammar.

In a usage-based theory of grammar, syntactic patterns can obtain the status of symbolic units if they both carry semantic/conceptual content and occur frequently enough to become entrenched in a speaker's linguistic system (Langacker 1987). These entrenched symbolic units range across a continuum of abstraction, from morphemes and words up through syntactic "constructions" (Goldberg 1995, 2006); in this view, there is no representational distinction between grammar and lexicon (e.g., Bybee & McClelland 2005, Gries 2008). Language is acquired as exemplars of each construction in use are built up through repeated experience (Bybee & McClelland 2005; Abbot-Smith & Tomasello 2006; N. Ellis & Ferreira-Junior 2009). Therefore, specific instances of use affect the stored mental representations of constructions (e.g., Bybee 2006, Bybee & Hopper 2001; N. Ellis 2002).

This type of usage-based approach, in which grammar arises from use (Hopper 1987; Bybee and Hopper 2001; Bybee 2006, 2007, 2010), and emerges to fulfill speakers' communicative and interactional goals (Givón 1979, Hopper & Thompson 1980, Du Bois

1987, Thompson & Hopper 2001) can thus account for subconscious yet systematic patternings observed in language in use, e.g., Preferred Argument Structure (Du Bois 1987), and Japanese speakers' tendency toward non-realized subjects for given referents. The frequencies of linguistic expressions and their contexts of use (syntactic/social/etc.) are what shape speakers' subconscious knowledge, or mental representations of the language (Bybee 2006, 2007, 2010; Abbot-Smith and Tomasello 2006); these representations constitute the discourse-based grammar of native speakers. Second-language learners—not just native speakers—have also been shown to be sensitive to the stochastic frequencies of linguistic forms in specific contexts (N. Ellis 2002; N. Ellis & Ferreira-Junior 2009).

First language acquisition researchers have increasingly found that the acquisition of grammar cannot be separated from its communicative context (see e.g., Ochs 1979; Clancy 2000; Tomasello 2002, 2006; Theakston & Lieven 2008). Moreover, the functions of a particular grammatical construction can only be determined based on data from language in use. It follows that naturally-occurring spoken language should also be examined in studies of second language acquisition, just as corpus-based approaches have already been widely embraced by the first language acquisition and the field of discourse-functional, usage-based linguistics as a whole.

As I have argued throughout this dissertation, there is much to be gained by examining non-native speaker utterances in the communicative context of conversations with native speakers. Conversation is distinct among other genres of discourse in the way it limits and shapes the responses of participants, and everyday conversation is the predominant form of interactional speech in Japanese (Takagi 2002). Naturally-occurring

data allow for an examination of the role of interactional phenomena in L2 acquisition that are primarily limited to conversation (such as questions/answers, backchannels, repetitions, co-constructions, etc.). However, SLA researchers have tended to base their studies on classroom data and/or to use experimental methods, such as a pre-test/post-test format for analyzing students' progress with respect to a particular type of form or construction (e.g., Sasaki 1998). The narrow emphasis in much SLA research on specific linguistic phenomena that occur only rarely in naturally-occurring discourse limits our larger understanding of the process of second language acquisition.

To date, few studies have examined L2 production in the context of conversation, especially in conversation with native speakers. In addition, a majority of the research on language acquisition, including SLA research, has focused on English and other European languages, rather than typologically quite different languages like Japanese. Furthermore, many Japanese language textbooks (and to my knowledge, Japanese learner corpora) primarily center around polite or formal registers of the language, although the communication that takes place in formal social situations may constitute only a small fraction of the total amount of linguistic interaction in which Japanese native speakers—and many non-native speakers—participate.

There is thus a need for research recognizing that informal Japanese conversational interactions may be the central locus of Japanese learners' exposure to and acquisition of native-speaker-like discourse patterns of speech. Furthermore, if we assume that participation in informal Japanese conversations plays an important role in L2 acquisition, it follows that we should be able to identify potential learning mechanisms within Japanese discourse.

While language courses tend to be focused on explicit instruction and targeted grammatical practice, natural conversations with native speakers provide learners with more implicit forms of feedback, provided in real time as speakers engage in 'negotiation for meaning' (Long 1996) when encountering communicative difficulties or trouble spots (Long 1981, 1985, 1996; Ellis et al. 2001; Foster and Ohta 2005). Prior SLA research has shown that interactional feedback from native speakers indeed plays a role in L2 learning (Mackey and Gass 2006, Inagaki & Long 1999, Mackey & Philp 1998). SLA scholars have also argued that the foundational explicit knowledge gained from classroom instruction makes it more likely that learners will notice particular structures when they are exposed to new input outside of the classroom (R. Ellis 2005). Noticing, a necessary precursor of learning (Inagaki & Long 1999), can then trigger processes in which explicit knowledge becomes implicit, subconscious, and internalized (Schmidt 1994, R. Ellis 2005).

As the findings of this dissertation have shown, feedback to L2 learners often consists of indirect, implicit clarification checks, repetitions, and recasts (e.g., Long et al. 1998, Lyster 1998, Braidi 2002, Nabei 2002); in conversations, this type of implicit feedback occurs more often than the explicit error correction that might be encountered in L2 classrooms. SLA research on feedback and L2 development has shown that both implicit and explicit feedback are positively associated with learning (e.g., Mackey and Philp 1998, R. Ellis et al. 2006). Moreover, much of the research in SLA has assumed that positive evidence (the target language in use) and negative evidence (feedback regarding what utterances are ungrammatical) both serve as learning mechanisms.

Recasts, "an implicit reformulation of the [learner's] nontarget utterance" (Lyster 2004: 331), are a source of both positive and negative evidence, since they indicate—

through their contrast with the learner utterance—that what the learner has said is incorrect (negative evidence) while also providing the target form (positive evidence) appropriate for the discourse context (Schachter 1991, R. Ellis 2007). While native speaker recasts (and more overt corrections and metalinguistic discussions) may be sources of some negative evidence, micro-level dialogic interactions related to the learner's NNS status, as well as participation in extended stretches of talk in general, are both valuable sources of contextualized positive evidence. L2 learners are likely to attend to specific structures within the input that they recognize from explicit instruction, regardless of their level.

SLA literature often focuses on negative evidence, in contrast to the field of first language acquisition, in which researchers have assumed that positive evidence plays a much larger role. For first language acquisition, Goldberg (2006: 229) has argued that linguistic input (positive evidence) itself contains indirect negative evidence involving "statistical preemption of non-occurring patterns." In other words, given enough natural input (i.e., positive evidence including all of the constructions and their contingencies in discourse), speakers should be able to form expectations about both what is and is not grammatical. Natural conversational data is thus a source of both positive and negative evidence, something which has often been overlooked in SLA research.

The present study thus contributes to the body of work on second language acquisition by: 1) approaching questions about second language acquisition from a discourse-functional, usage-based perspective, 2) examining L2 learner data in the communicative context of naturally-occurring conversation, 3) investigating the L2 acquisition of Japanese, rather than English or another European language, 4) using a learner corpus of conversations among close friends or acquaintances who are speaking in

a casual register of Japanese, 5) investigating the role of positive evidence rather than focusing on negative evidence alone, and 6) assuming that L2 learning involves the acquisition of a discourse-based grammar mirroring that of native speakers.

6.2. Methodological contributions

In highlighting the importance of L2 learners' participation in conversations with native speakers, the present study has also emphasized the importance of examining naturalistic data in second language acquisition research. While much of the research in SLA has employed experimental methodologies, fewer studies have examined natural conversational L2-learner data; however, such data hold many advantages over experimental or classroom data, particularly for languages like Japanese that rely heavily on pragmatic context for their interpretation (as discussed with respect to construals of GNMCCs in Ch. 4 and non-realization of subjects in Ch. 5).

Conversational data differs from classroom or experimental data in that participants in Japanese conversation typically do not use any subject arguments in their clauses (Ch. 5), and may produce highly abstract and context-dependent noun-modifying constructions (Ch. 4). Compared to classroom discourse or constructed data, L2 learner corpora contain interactional phenomena that occur primarily in conversation, such as question/answer sequences, co-constructions and repetitions (Ch. 3), referent tracking across conversational discourse and conversational narratives, the use of noun-modifying constructions to introduce new referents into the discourse (Ch. 4), and clauses without realized subjects, whose referents tend to be given rather than new and are inferable from pragmatic context

(Ch. 5). Moreover, compared to classroom or experimental studies, conversational data also offer the potential for a greater diversity of topics, grammatical structures, and larger discourse structures, such as conversational narratives.

The opportunity for extended talk on one topic of conversation, or a naturally shifting series of conversation topics, gives L2 learners unique opportunities, which they may not receive in the classroom: 1) to have some say in the topics being discussed, 2) to synthesize their explicit and implicit knowledge into coherent, interactional talk in real time, 3) to produce conversational narratives in which they introduce and then track referents through the discourse, without consistently realizing the subject of every clause (as native speakers of English, for example, might be tempted to do based on L1 patterns), 4) to benefit from the positive evidence of native speaker utterances embedded in an authentic interactional context, 5) to receive negative feedback that is integrated into the ongoing flow of talk, and 6) to experience cognitive priming effects and have the chance to engage in naturally-occurring repetitions of difficult forms produced by the native speakers.

In using a methodology based on natural conversation, this study was able to discover what types of evidence, feedback, and constructions non-native speakers encounter in spontaneous interaction, including moments when they produce non-native talk, as discussed in Chapter 3. Chapters 4 and 5 employed a variety of statistical methods, including the use of mixed-effects models to examine the speech of individual learners who each contribute multiple data points; mixed-effects models allow the results to be generalized to the population at large. In its use of both qualitative and quantitative

approaches, this study models a combination of methodologies that can be used to examine learner corpora, even when L2 speakers are at differing 'levels' of language ability.

6.3. Research findings

6.3.1. Chapter 3 findings: When L2 learners speak non-natively

Chapter 3 took on the task of demonstrating, in a detailed and qualitative way, the interactional structures through which non-native speakers are given the opportunity, and in some cases proactively seek, to advance their proficiency in the L2 through conversations with native speakers. Based on the examples in this chapter, there is evidence that non-native speakers make use of moments of conversational feedback for improving their L2 ability, not only through some uptake of NJS recasts, but also by repeating after NJS-produced utterances, presumably to aid in processing of unfamiliar or challenging material; such repetitions may also function as a cue to native speakers that the NNS is having difficulty processing particular utterances. Nearly all of the dialogic interactions examined—with the exception of NNS self-corrections and NJSs indicating their confusion with a NNS discourse referent—occurred more frequently in the conversations with the less experienced NNSs.

Many of the dialogic interactions illustrated types of repair, e.g., recasts, in conversations between native and non-native speakers that also occur in ordinary talk among native speakers. The main goal of these sequences is to ensure smooth communication, although both self- and other-initiated repairs serve other functions as

well, including circumventing disagreement (Schegloff 1987: 107) or offering explanations (Schegloff 1992: 1312). Schegloff et al. (1977: 378) argue that other-initiated corrections are often downgraded in terms of the confidence or certainty with which they are presented; however, in asymmetrical L1-L2 interactions (when the repair pertains to one speaker's L2 ability), this confidence-downgrading is not necessary on the part of the native speaker, since both speakers are aware of their differing expertise and experience in the language (Hosoda 2006). This imbalance between the two speakers allows for more overt corrections or recasts by the native speaker, and allows the non-native speaker to implicitly query the native speaker's linguistic knowledge (e.g., for a missing lexical item) by simply using rising intonation or code-switching.

The findings of Chapter 3 demonstrated that although a majority of NNS L2 errors were grammatical, NNSs' self-corrected errors were half lexical and half grammatical, while native speaker recasts occurred after a greater proportion of lexical rather than grammatical errors; this implies that lexical errors are perhaps more salient, in particular for NJSs, and that addressing lexical versus grammatical errors is seen by NJSs as more important for ensuring smooth communication. These findings from naturally-occurring conversation are similar to results of SLA studies on classroom data, such as Lyster (1998: 266), who found that (French language) L2 instructors provided consistently high rates of feedback on phonological and lexical errors, while grammatical errors "received corrective feedback at a lower rate, but accounted for the highest number of corrective feedback moves in the database nonetheless."

The investigation in Chapter 3 also found that most NNS-initiated inquiries resulted in helpful responses from NJSs (94%) followed by NNS uptake (88%), while NJS-initiated

recasts resulted in lower rates of NNS uptake (41%). This suggests that NNSs show more evidence of noticing native speaker input when the NNS initiates the dialogic sequence seeking the input; this crucial step of noticing is necessary for learning (e.g., Inagaki & Long 1999, Schmidt 1994, R. Ellis 2005).

6.3.2. Chapter 4 findings: Noun-modifying constructions

Chapter 4 investigated the use of Japanese noun-modifying constructions (NMCs) by native and non-native speakers. These constructions present a challenge to L2 learners: the verbal GNMCC type has a fundamentally different structure from relative or complement clauses in English (Comrie 1998b), and subtle differences in structure from constructions that perform similar functions in Korean and Chinese (Matsumoto 1997). Many NMCs, in particular GNMCCs, depend on the discourse-pragmatic context for an interpretation of the relationship of the NMC to its head noun.

The results demonstrated that the NNSs as a group produced NMCs with frequencies and distributions that were remarkably similar to those of the NJSs. However, the non-native speakers produced proportionally more *no* (GEN) types than the NJSs, and relatively fewer NMCs with verbs; these findings were not surprising, since verbal NMCs are arguably the most challenging type to learn, due to their pragmatic and at times abstract interpretations. However, it was unexpected that the NNSs did not rely more heavily on attributive adjective-type NMCs, considering their structural similarity to such constructions in English, the native language of 8 of the 12 NNSs; yet NNSs produced proportionally fewer attributive adjective-type NMCs than the native speakers. The

distributions of NMC structural types among the two L2 learners with the least experience in Japan had the largest divergences (measured with the Kullback-Leibler divergence statistic) from the NJSs: these speakers produced far more *no*-type NMCs and far fewer verbal and attributive adjective-type NMCs, indicating that such types are indeed more difficult for newer L2 learners to master. These speakers also differed the most from their individual NJS interlocutors, compared to the other NNS-NJS pairs; an examination of the 12 pairs revealed that the more the two speakers resemble each other with respect to the types of NMCs they use, the more likely it is that the NNS's use of NMCs will resemble that of NJSs in general.

Inquiry into the distributions of the semantic types of head nouns in NMCs revealed a larger range of variation among the NNSs, compared to the NNS production of NMC structural types; this suggests that it is less predictable when NNSs will acquire a native-like distribution and begin to mirror NJSs in terms of head noun types than in terms of NMC structural types. NJSs and NNSs both produced a majority of NMCs with lexical head nouns, followed by light head nouns; generic nouns were the least frequent among both groups' NMCs. These findings contrast with the greater frequency of light head nouns found by Takara (2012) and Ono & Thompson (2009) for conversational Japanese data among native speakers, although each of those studies examined only one type of NMC (GNMCCs and attributive adjective types, respectively). However, the results of the present study were similar to those studies in that type frequency was found to be much higher for lexical heads than for light heads: there is a smaller set of light heads that tend to be used in fixed grammatical expressions, each of which must be acquired individually by

L2 learners. As a result, the use of light heads is potentially more challenging for non-native speakers.

Examining L2 acquisition through the lens of conversational data provides useful insight into the extent to which grammars of learners mirror those of native speakers, and into how this process of convergence takes place. Chapter 4 revealed an interesting relationship between speakers' distributions of NMC types and head noun types. A comparison of these two measures of NNSs' divergence from the NJSs showed that there is a significant correlation between the NNS rankings based on NMC-type distributions and head noun-type distributions. This suggests that native-like L2 distributions of these two aspects of Japanese noun modification are acquired hand in hand, and may be similarly difficult for learners. This correlation provides further support for the idea that examining learners' NMC type and head noun type distributions, compared to those of NJSs, offers useful insight into the extent to which the grammars of learners mirror those of native speakers.

Another finding of Chapter 4, the use of NMCs with new versus previously mentioned referents, sheds light on the discourse-based nature of L2 learning. The NNSs and NJSs were not significantly different from each other in this respect. Although native speakers used a slightly larger proportion of anaphoric light heads (having a previously mentioned referent) than lexical heads, the difference from the NNSs' usage was not significant. The findings suggest that all speakers often employed NMCs to introduce new referents into the conversation. The NNSs' similar patterning to NJSs in their use of anaphoric heads indicates that this function of NMCs may be relatively easily learned. In contrast, the less native-like distribution of NMC forms among the less experienced non-

native speakers implies that the NMC forms themselves present greater challenges to these L2 learners.

6.3.3. Chapter 5 findings: Subject realization

Chapter 5 presented a case study of subject realization among NNSs and NJSs in conversation, examining the discourse-pragmatic factors influencing the subject realization patterns of each group of speakers. This analysis investigated the extent to which the same factors influence native speakers' versus learners' choices of whether to realize subject arguments or not. Native speakers' realization of subjects in Japanese is based on many discourse-pragmatic factors. Specifically, in Japanese conversation several general patterns can be observed: 1) subject arguments are often left unexpressed, 2) the intended referents of unrealized subjects can usually be inferred from context, 3) new subjects are likely to be realized, 4) unrealized subjects are likely to be given, i.e., their referents can be assumed to be activated in the consciousness of the conversational participants based on the discourse context, and 5) contrastive subjects are likely to be realized.

My assumptions were that native speakers' patterns of subject realization are influenced by the discourse-pragmatic factors of givenness and contrast, and that non-native speakers can only demonstrate comparable sensitivities to these factors if exposed to native-speaker frequencies of use in conversational interaction. Therefore, the hypothesis I tested was that the more non-native speakers have engaged in conversation with native speakers, the more closely their usage (and the discourse-pragmatic factors that influence it) should mirror that of native speakers.

In the mixed-effects model used for this analysis, the final model (containing only the significant effects and predictors of the dependent variable of subject realization) showed a significant interaction of givenness and contrast, affecting the speakers' realization of subjects: in non-contrastive cases, there was a strong givenness effect, with speakers realizing given referents less often than new referents (11.86% versus 78.66%); however, the givenness effect disappeared in contrastive cases, where subject arguments tended to be consistently realized (86%). There was also a slight but significant main effect of speaker type (NNS vs. NJS), with non-native speakers realizing their subject arguments at a slightly higher frequency than native speakers in general (with a 26% versus 22% predicted probability), regardless of contrast or givenness. Yet the two groups of speakers as a whole displayed remarkable similarities with respect to subject realization based on the discourse-pragmatic factors of contrast and givenness in real-time naturally-occurring conversation.

Individual NNS and NJS participants were thus shown to be sensitive to whether subject referents were given or new, as well as whether they were contrasted with another referent. Furthermore, for non-contrastive subjects, participants demonstrated sensitivity not to a binary given/new distinction, but apparently to the ratio-scaled distance (up to 10 clauses back) to the last mention or reference to a referent. The greater the distance to the last mention/reference (up to 10 clauses), the more likely a speaker was to produce an overt subject. These results suggest that givenness (or "newness") should be viewed as a matter of degree, situated along a continuum, rather than as a strict dichotomy. This finding provides additional support for previous analyses arguing for an incremental view of referential distance and its effects on processing (e.g., Clancy 1980, Givón 1983). I would

argue as well that, based on these findings, such a distribution of native-speaker-like subject realization, based on a sensitivity to the discourse-pragmatic factor of givenness, could best be acquired from exposure to and experience with the distribution found in naturally-occurring conversations with native speakers. Similarly, the stochastic frequencies with which subjects are realized in contrastive contexts in spoken Japanese is also a skill that requires exposure to natural conversational input.

I return now to the hypothesis that the subject realization patterning (and the discourse-pragmatic factors that influence it) of more experienced NNSs should more closely mirror that of native speakers than does that of less experienced NNSs. Indeed, statistical analysis of individual speakers revealed that three of the NNSs consistently grouped together in their treatment of givenness and contrast: these were speakers 24, 25, and 26. Speaker 24 had only lived in Japan for 3.5 years, and speakers 25 and 26—also the outliers in many of the results of the analysis in Chapter 4—had only lived in Japan for one month each. If we view the influence of discourse factors on subject realization as one indicator of Japanese conversational proficiency, we can take these results as showing a natural grouping of these three non-native speakers based on this aspect of their conversational grammars; these results can also be interpreted as providing independent evidence for the categorization of these speakers as less experienced or less advanced (beyond simply assessing speakers based on self-reported length of time living in Japan and studying the language).

From a methodological perspective, the use of a mixed-effects model for L2 corpus data in Chapter 5 allowed for a comparison not merely of the raw frequencies of realized versus non-realized subjects, but also for an analysis of what independent discourse-

pragmatic factors influence native speakers' choices to produce overt subject arguments. I would therefore argue that the significant findings of the analysis justify the use of this methodology, and have yielded results that can serve as an objective measure of non-native speakers' relative language ability, defined with respect to how closely their discourse-based patterns of subject realization mirror those of native speakers.

6.4. Learning through conversation

The three separate case studies that constitute this dissertation were chosen in order to examine a variety of interactional, discourse-based aspects of language use falling along a cline of linguistic phenomena ranging from those involving more explicit L2 knowledge (i.e., conscious awareness) to those relying more on implicit (i.e., subconscious) knowledge. Interlocutors are likely to attend to NNS inquiries about lexical items, whether in the syntactic form of a question or conveyed simply by rising intonation, and to NJS feedback such as recasts, which are noticeable since their form contrasts with the NNS's prior utterance. The distributions of speakers' noun-modifying grammatical constructions in conversation are accessible through corpus-based analysis, but are less perceivable to speakers themselves. Additionally, while L2 learners may need to consciously attend to the grammatical structure of NMCs, both for production and comprehension, NMC distributions in conversations are based on discourse-pragmatic factors. Native speakers' patterns of subject realization, based on discourse-pragmatic factors such as givenness and contrast, may be even more subtle; they are likely subconscious, and could only be acquired from exposure to and participation in naturally-occurring conversations. Thus

these three case studies focus on what are perhaps increasingly difficult aspects of acquiring an interactional, conversational grammar of a second language: from the more conscious lexical and grammatical aspects of a discourse-based grammar to the presumably subconscious pragmatic aspects.

In Chapter 3, we saw that most types of dialogic sequences related to the NNS status of the learner occurred more often for the less experienced speakers; this was not surprising since they also produced the most L2 errors, one of the triggers of such sequences. Similarly, these less experienced speakers also stood out from the other NNSs in terms of their distributions of structural types of NMCs (Ch. 4), and in terms of their patterns of subject realization (Ch. 5).

In nearly all cases, compared to less experienced L2 speakers, the more experienced learners produced talk that more closely mirrored that of native speakers. They did this not just in terms of a relative lack of L2 errors or a similarity of raw frequencies of native-like production, but also in terms of the influence of underlying discourse-functional factors on their distributions of talk. As a group, the NNSs quite closely mirrored the NJSs in terms of NMC production and subject realization. The NNSs were not significantly different from the NJSs in using NMCs to modify new versus previously mentioned referents. In addition, the NNSs as a group produced patterns of subject realization similar to those of NJSs in cases of given versus new referents and marked contrast, with only the three least experienced NNSs exhibiting different behavior.

L2 learners who have the advantage of living in Japan are necessarily exposed to conversational input outside of the classroom, whether or not they are also participating in language courses. Once L2 learners have the opportunity to experience natural language

outside of the classroom, they can begin to acquire the discourse-based aspects of the second language. The extent to which the conversational grammar of the more advanced NNSs in this study mirrored that of native speakers provides support for the notion that the process of second language acquisition should be investigated within the communicative context of conversational data as soon as learners have progressed enough to venture beyond the classroom. The results also convey the importance of learners' exposure to positive evidence from naturally-occurring input; since the more experienced learners have likely acquired the discourse-based aspects of their L2 ability from conversation, the findings support the view that explicit classroom instruction alone is most likely insufficient for achieving this level of mastery.

When non-native speakers engage in conversations with native speakers, a range of dialogic exchanges that are related to their status as L2 learners occur, e.g., non-native speakers inquire about lexical items and repeat novel material, while native speakers offer recasts and synonymous forms. Furthermore, non-native speakers may be attending to native speaker feedback even when there is not clear uptake or an overt response (Ohta 2001). Undertaken in conjunction with language courses, which tend to be focused on explicit instruction and targeted grammatical practice, natural conversations with native speakers provide learners with more implicit forms of feedback, given in real time as speakers engage in negotiation for meaning, when encountering communicative difficulties or trouble spots (Long 1981, 1985, 1996; Ellis et al. 2001; Foster and Ohta 2005). In attempting to answer the question of what happens when a non-native speaker speaks non-natively, this study has shed light on how NNSs and native speakers interact, and expanded our understanding not only of what a NNS will encounter when speaking non-natively, but

also of the empirical resources that native speakers make available to non-native speakers in conversation.

Through the inclusion of some less experienced (intermediate) speakers in the sample, the findings of this study showed which specific aspects of a Japanese discourse-based grammar tend to be more challenging for newer L2 learners. These include adjectival and verbal NMCs (in contrast to *no*-genitive NMCs, which seem to be easier to learn) and the use of NMCs to modify light head nouns (which are often used in fixed constructions that may be challenging for NNS, as they need to be learned individually). The less advanced speakers also made more L2 errors compared to other NNSs, received more NJS recasts following some of those errors, received more instances of NJSs providing synonymous forms, and engaged in more repetition of challenging structures or forms. Beyond indicating the relative levels of the L2 learners themselves, the recasts and synonyms they produced demonstrate the sensitivity of the native speakers to the NNSs' process of learning through conversation. The primary focus of the native speakers is simply to communicate; whether or not native speakers consciously modify their speech when conversing with learners, such interactions are undoubtedly beneficial to learners.

Using a combination of qualitative and quantitative approaches, this study has demonstrated that various aspects of naturally-occurring conversation with native speakers function as potential learning mechanisms for non-native speakers. These include, but are not limited to, interactional feedback in real time following NNS errors and metalinguistic inquiries (Ch. 3), exposure to patterns of native speaker noun-modifying constructions embedded in a discourse context (Ch. 4), and exposure to the stochastic frequencies with which subjects are realized depending on discourse factors such as givenness and contrast

in casual spoken Japanese (Ch. 5). The latter two, in particular, are phenomena present in conversational interactions that are unlikely to be encountered in an L2 classroom setting.

While many SLA studies focus on negative evidence, in contrast to the importance placed on positive evidence in first language acquisition, this study has assumed an important role for positive evidence in L2 learning as well. The findings from Chapter 3 showed that conversations with native speakers contain information about both what is and is not grammatical (i.e., positive and negative evidence), and that both types of evidence serve as potential learning mechanisms. Moreover, in conversations with native speakers, non-native speakers are exposed to positive evidence in the form of patterns of speech that are unique to naturally-occurring interactions and shaped by the surrounding discourse context. This was illustrated, in particular, by the results of Chapter 5, which demonstrated that native and non-native speakers' patterns of subject realization are similarly influenced by the discourse-functional factors of givenness and contrast. Likewise, Chapter 4 demonstrated that NNSs did not significantly differ from NJSs in using NMCs to modify head nouns that had previously mentioned referents versus new referents. These results support the view that frequencies of usage associated with discourse-pragmatic factors constitute part of the mental representations, and thus the discourse-based grammar, both of native speakers of Japanese and of non-native speakers who are in the process of acquiring the language. It follows that non-native speakers, in the absence of extended conversational talk in the classroom, can acquire the same discourse-based patterns as native speakers only through additional experience beyond the classroom, in which language is embedded in the real-world context of conversational interaction. The extent to which the language of most of the advanced L2 learner participants in this study mirrored

that of native speakers suggests that exposure to naturally-occurring conversation plays a critical role in acquiring native-like, discourse-based grammar.

6.5. Conclusions

In this dissertation, I have demonstrated that the language of both native and non-native learners is influenced by discourse-functional factors. Once non-native speakers have a certain amount of experience with the language in everyday discourse, their patterns of speech closely follow those of native speakers, not just in terms of their ability to produce isolated grammatical utterances, but also in terms of their (subconscious mirroring of) larger statistical patterns, including distributions of types of noun-modification and subject realization in certain discourse contexts.

Since the benefits of participation in conversational interactions are clear, why not simply add more conversation practice time into language course curricula? The problem is that learners would still be practicing among themselves, each primarily concerned with his or her own production and comprehension of the language. While pairs of L2 learner peers—in particular those at different L2 levels and unevenly paired—could perhaps recast some of each others' ungrammatical utterances, learners would likely not receive the same types of feedback in real time as from interactions with native speakers. Such interactions include not only recasts but also native speaker backchannels and interactional repetitions. L2 classroom peers would also be unlikely to receive online comprehension practice with tracking referents—with and without subjects—across an extended series of utterances.

Nor would they benefit from native speaker accommodations, such as the provision of synonymous forms for difficult lexical items.

The findings of this dissertation have shown that learners can and do receive instructive evidence, both positive and negative, outside of the classroom. Through participating in casual, one-on-one conversations with native speakers, L2 learners benefit from the positive evidence of the input, and from opportunities for extended talk with an attentive native speaker, as well as from potential feedback containing negative evidence. Exposure to conversational discourse is also important since participation in conversation places much stronger time constraints on processing compared to other modalities, such as written or computer-mediated discourse, as speakers must process interlocutors' utterances and respond to them in real time during ongoing conversational interaction. Language courses can assist L2 students both by preparing them for what they might find in natural discourse (e.g., non-realization of subjects in Japanese across a set of related sentences), and by ensuring that students also receive actual experience with conversational discourse (in addition to the written narrative or expository discourse that is often the focus of language courses), not just information about it. As suggested in Chapter 3, this could be achieved by building time into the curriculum for lengthier free conversation practice among L2 peers, or, better yet, by facilitating (and potentially requiring) language exchanges with native Japanese speakers, whether in person or mediated by computer-assisted language learning (CALL) technologies to digitally connect classrooms of students with language exchange partners overseas.

This study's findings reveal which native-like patterns of speech are closely mirrored by most non-native speakers, and which are more difficult for some less

experienced speakers, while illustrating the extent to which speakers' linguistic interactions are affected by discourse-functional factors, such as contrast and givenness. It therefore additionally demonstrates that key questions in SLA can be answered using a discourse-functional approach, and that taking a usage-based perspective is just as relevant and useful in SLA research as in the field of linguistics as a whole.

Moreover, the findings have theoretical implications for a usage-based theory of L2 acquisition, in support of several key notions: 1) information about what is and is not grammatical (i.e., both positive and negative evidence) is available to language learners in conversations with native speakers, 2) both types of evidence serve as L2 learning mechanisms, and 3) the conversational grammars of (intermediate to advanced) non-native speakers mirror those of native speakers in exhibiting systematic relationships between grammatical form and discourse function.

6.6. Suggestions for Future Research

This study has opened several avenues of future research. By using a combination of qualitative and quantitative methods to examine corpus data, it invites comparative research using experimental and classroom methods to replicate the findings. Most crucially, as discussed in Chapter 3, it is difficult to control effectively for adult L2 learners' exposure to their second language; yet there is a need for more controlled studies of SLA involving naturally-occurring discourse between native and non-native speakers.

It would be valuable to conduct similar research with a larger corpus of NJS-NNS speech. A larger corpus would not only allow the present findings to be replicated, but

would also allow for a more detailed examination of less frequent discourse phenomena (i.e., those with too few tokens in the corpus used for this study). For example, verbal GNMCCs, while not necessarily a low-frequency phenomenon, nevertheless constituted only a small portion of the total NMCs in the corpus and did not occur frequently enough to permit a detailed quantitative analysis of the usage, by NJSs versus NNSs, of sub-types of verbal GNMCCs based on the grammatical/pragmatic relation of the head noun to the predicate of the modifying clause, or the grammatical relation of the GNMCC (head noun) to the predicate of the larger main clause. Among GNMCCs, certain types are likely to be more challenging for NNSs, both based on the L1s of NNSs that are typologically different from Japanese, such as English, and because of the amount of pragmatic inferencing required to produce or interpret them.

It would also be valuable to have a source of longitudinal data from NJS-NNS interactions, including data from L2 speakers when they were just beginning to learn the language. This type of data would allow researchers to track the progression of L2 development based on learners' exposure to L2 input, to the degree that it is possible to control for this; it would also permit analysis of the effects of individual differences on the process of L2 acquisition. Longitudinal data with more pairs of L1-L2 speakers, especially if combined with more controlled experimental data in which the L1-L2 speaker pairings were shuffled, would also provide insight into individual differences among native speakers in terms of both patterns of speech and the extent to which they modify their speech to accommodate non-native speakers.

Along the same lines—and especially since longitudinal data, particularly of adult L2 learners, may be difficult to come by—it would also be valuable to have more data

from less experienced, lower-level L2 speakers, as only a few of the 12 NNS participants in the present study differed from the relatively advanced L2 speakers in most respects. Studies with participants at a wider range of L2 levels would be better able to ascertain which aspects of acquisition are more challenging to lower-level learners and would thus expand our understanding of the order and mechanisms of L2 acquisition. Additionally, it would be beneficial to examine NNS-NJS conversations that take place among L2 speakers of various typologically different L1s. Although this was not the focus of the present study, since the role of the L1 is thought to be far less important for advanced L2 speakers than for lower-level ones (e.g., Clahsen & Felser 2006, Dussias & Sagarra 2007), this would be a particularly important consideration for less experienced L2 learners.

Additionally, it would be worthwhile to compare the types of dialogic sequences encountered in NJS-NNS conversations to those in conversations among native Japanese speakers (or conversations among L2 learner peers), to better assess the ways in which native speakers may be modifying their speech to accommodate L2 learners. The findings would afford a deeper understanding of the types of peer-to-peer interactions and learning mechanisms present in conversations among L2 learners, including those that take place in the classroom.

As discussed throughout this dissertation, natural corpus data offers many advantages for studies of SLA. Although I have emphasized the importance of conversational data, to the extent that it is possible to control for NNSs' experience with the L2, it would be valuable to employ experimental methods as well, to shed further light on some of the corpus findings. For example, the effects of conversational recasts, repetitions, affirmative backchannel responses, and metalinguistic inquiries could be

investigated in a controlled setting, such as with a pre-test/post-test format before and after NNS conversations with a native speaker confederate, who converses with the NNS according to a rough script. Experimental methodologies, with tests before and after stimuli were presented to L2 learners, could also be used to investigate: 1) the effects of NNS exposure to clauses with and without realized subjects on NNSs' own pattern of subject realization, both in a test format and in natural conversation, and 2) the effects of NNS exposure to NMCs embedded in discourse on NNSs' own production (and/or comprehension) of NMCs, especially of the verbal GNMCC type, as suggested in Chapter 4.

Lastly, this study has made many assumptions about the limits of conversational interactions in the classroom setting due to time constraints and other logistical factors. It is my hope that this dissertation sparks comparative empirical studies of classroom interactions and conversational discourse between learner peers, in order to investigate the quantifiable limitations of classroom L2 usage compared to naturally-occurring discourse. For example, it would be interesting to identify and code segments of naturally-occurring conversations that are related to a unified topic, and compare these to stretches of targeted yet naturalistic conversation that take place in language classrooms, both in terms of the length of such stretches of talk (in time, intonation units, clauses, or mentions of a specific topical referent), and in terms of the variety of structures, interactional phenomena, and patterns of subject realization that occur.

With this dissertation, I hope to have illustrated the extent to which discourse-pragmatic factors influence patterns of speech among both native and non-native speakers,

and thus to have shown that participation in naturally-occurring conversation plays a vital role in the acquisition of a discourse-based L2 grammar.

References

Abbot-Smith, Kristen and Michael Tomasello. 2006. "Exemplar-learning and schematization in a usage-based account of syntactic acquisition." *The Linguistic Review* 23. 275-290.

Adelman, Allison. 2010. "Prosody and Argument Structure in the Acquisition of Japanese." MA Thesis in Linguistics, University of California, Santa Barbara.

Allen, P. M. Swain, B. Harley, and J. Cummins. 1990. "Aspects of classroom treatment: Toward a comprehensive view of second language education." In Harley, B. P. Allen, J. Cummins, & M. Swain (eds.), *The development of second language proficiency*. Cambridge University Press. 57-81.

Baker, N. D. & K.E. Nelson. 1984. "Recasting and related conversational techniques for triggering syntactic advances in young children." *First Language* 5(1). 3-21.

Banno, Eri, Yoko Ikeda, Yutaka Ohno, Chikako Shinagawa, and Kyoko Tokashiki. 2011. *Genki: An integrated course in elementary Japanese, 2nd ed*. Tokyo: The Japan Times.

Bates, Elizabeth & Brian MacWhinney. 1987. "Competition, variation, and language learning." In MacWhinney, Brian (ed.), *Mechanisms of language acquisition*. Mahwah, NJ: Erlbaum. 157-193.

Beebe, L. and H. Giles. 1984. "Speech accommodation theories: A discussion in terms of second language acquisition." *International Journal of the Sociology of Language* 46. 5-32.

Benjamin, Trevor and Harrie Mazeland. 2013. "Conversation analysis and other-initiated repair." In Chapelle, Carol A. (ed.), *The Encyclopedia of Applied Linguistics*. Published Online: 5 NOV 2012, DOI: 10.1002/9781405198431.wbeal1310.

Bock, J. Kathryn. 1986. Syntactic persistence in language production. *Cognitive Psychology*, 18(3): 355-387.

Bock, K., & Loebell, H. 1990. Framing sentences. *Cognition 35.* 1–39.

Bohannon, J. N. & L. Stanowicz. 1989. "Bi-directional effects of repetition in conversation: A synthesis within a cognitive model." In Nelson, K.E. & G. Speidel (eds.), *The many faces of imitation in language learning*. New York: Springer Verlag. 122-150.

Boyd, Jeremy K. and Adele E. Goldberg. 2011. "Learning what NOT to say: The role of statistical preemption and categorization in a-adjective production." *Language* 87(1). 55-83.

Braidi, S.M. 2002. "Reexamining the role of recasts in native-speaker/nonnative-speaker interaction." *Language Learning* 52. 1-42.

Bruner, J. 1975. "The ontogenesis of speech acts." *Journal of Child Language* 2. 1-40.

Bybee, Joan and Paul J. Hopper (eds.). 2001. *Frequency and the emergence of linguistic structure*. Amsterdam: John Benjamins.

Bybee, Joan and James L. McClelland. 2005. "Alternatives to the combinatorial paradigm of linguistic theory based on domain general principles of human cognition." *The Linguistic Review* 22. 381-410.

Bybee, Joan. 2010. *Language, usage, and cognition*. Cambridge University Press.

Bybee, Joan. 2007. *Frequency of use and the organization of language*. Oxford: Oxford University Press.

Bybee, Joan. 2006. "From usage to grammar: the mind's response to repetition." Paper presented at the Linguistic Society of America, Oakland.

Bybee, Joan. 1985. *Morphology: A study of the relation between meaning and form.* Philadelphia: Benjamins.

Camarata, S.M., K.E. Nelson, and M.N. Camarata. 1994. "Comparison of conversational recasting and imitative procedures for training grammatical structures in children with specific language impairment." *Journal of Speech and Hearing Research* 37. 1414-1423.

Carroll, S. 2001. *Input and evidence: The raw material of second language acquisition.* Amsterdam: John Benjamins.

Carroll, S. and M. Swain. 1993. "Explicit and implicit negative feedback: An empirical study of the learning of linguistic generalizations." *Studies in Second Language Acquisition* 15. 357-386.

Chafe, Wallace. L. 1976. "Givenness, Contrastiveness, Definiteness, Subjects, Topics, and Point of View." In Li, C. N. (ed.), *Subject and Topic*. New York: Academic Press. 25-56.

Chafe, Wallace L. 1979. "The flow of thought and the flow of language." In T. Givón, (ed.), *Syntax and semantics: Discourse and syntax (vol. 12)*. New York: Academic Press. 159-182.

Chafe, Wallace L. 1987. "Cognitive constraints on information flow." In Tomlin, Russell S. (ed.), *Coherence and grounding in discourse*. Amsterdam: John Benjamins. 21 – 51.

Chafe, Wallace L. 1994. *Discourse, consciousness, and time: The flow and displacement of conscious experience in speaking and writing*. University of Chicago Press.

Clahsen, H. and C. Felser. 2006. Grammatical processing in language learners. *Applied Psycholinguistics* 27(1). 3-42.

Clancy, Patricia, Sandra A. Thompson, Ryoko Suzuki, and Hongyin Tao. 1996. "The conversational use of reactive tokens in English, Japanese, and Mandarin." *Journal of Pragmatics* 26. 355-387.

Clancy, Patricia, Noriko Akatsuka, and Susan Strauss. 1997. Deontic modality and conditionality in discourse: A cross-linguistic study of adult speech to young children. In Kamio, Akio (ed.), *Directions in Functional Linguistics*. Amsterdam: John Benjamins. 19-57.

Clancy, Patricia M.. 2000. Transitivity in Korean acquisition: Discourse-functional foundations. In Clark, Eve V. (ed.), *The proceedings of the 13th annual child language research forum*. Stanford, CA: Center for the Study of Language and Information. pp. 15-22.

Clancy, Patricia M. 1985. "The acquisition of Japanese." In Slobin, Dan I. (ed.), *The crosslinguistic study of language acquisition. Vol. 1: The data.* Hillsdale, NJ: Lawrence Erlbaum. 373-524.

Clancy, Patricia M. 1980. "Referential choice in English and Japanese narrative discourse." In Chafe, Wallace (ed.), *The pear stories: Cognitive and linguistics aspects of narrative production*. Norwood: Ablex. 127-202.

Clark, Herbert H. and Deanna Wilkes-Gibbs. 1986. "Referring as a collaborative process." *Cognition* 22. 1-39.

Comrie, Bernard. 1989. *Language universals and linguistic typology, 2nd edition*. Chicago: The University of Chicago Press.

Comrie, Bernard. 1996. "The unity of noun-modifying clauses in Asian languages." In *Pan-Asian Linguistics: Proceedings of the Fourth International Symposium on Languages and Linguistics*, January 8-10, 1996. Salaya, Thailand: Institute of Language and Culture for Rural Development, Mahidol University at Salaya. 1077-1088.

Comrie, Bernard. 1998a. "Attributive clauses in Asian languages: Towards an areal typology." In Boeder, W., C. Schroeder, K.H. Wagner, & W. Wildgen (eds.), *Sprache in Raum und Zeit: In memoriam Johannes Bechert, Band 2—Beiträge zur empirischen Sprachwissenschaft*. Tübingen: Gunter Narr. 51-60.

Comrie, Bernard. 1998b. "Rethinking the typology of relative clauses." *Language Design* 1. 59-86.

Comrie, Bernard. 2007. "The acquisition of relative clauses in relation to language typology." *Studies in Second Language Acqusition* 29. 301-309.

Comrie, Bernard. 2013. (Oral presentation.) "Generalized Noun-Modifying Clause Constructions in the Languages of the World," Colloquium, UC Santa Barbara Department of Linguistics. Jan. 31, 2013. Santa Barbara, CA.

Comrie, Bernard, and Kaoru Horie. 1995. "Complement clauses versus relative clauses: Some Khmer evidence." In Abraham, Werner, T. Givón, & Sandra A. Thompson (eds.), *Discourse, Grammar and Typology*. Amsterdam: John Benjamins. 65-76.

Cook, H.M. 1992. "Meanings of non-referential indexes: A case study of the Japanese sentence-final particle *ne*." *Text* 12(4). 507-539.

Coupland, N. and H. Giles. 1988. "Introduction: The communicative contexts of accommodation." *Language and Communication* 8. 175-182.

Diessel, H. & M. Tomasello. 2000. "The development of relative clauses in spontaneous child speech." *Cognitive Linguistics* 11. 131-151.

Doughty, C. 1991. "Second language instruction does make a difference: Evidence from an empirical study of SL relativization." *Studies in Second Language Acquisition* 13. 431-469.

Doughty, C. 1994. “Fine-tuning of feedback by competent speakers to language learners.” In Alatis, J. (ed.), *Georgetown University Round Table on Languages and Linguistics*. Washington D.C.: Georgetown University Press.

Doughty, C. and E. Varela. 1998. “Communicative focus on form.” In Doughty, C. and J. Williams (eds.), *Focus on form in classroom second language acquisition*. New York: Cambridge University Press.

Drew, P. & J. Heritage. 1992. “Analyzing talk at work: An introduction.” In Borden, D. and D.H. Zimmerman (eds.), *Talk and Social Structure*. Cambridge: Polity Press. 3-65.

Du Bois, John W. 1987. “The discourse basis of ergativity.” *Language* 63. 805-855.

Du Bois, John W. 1991. “Transcription design principles for spoken discourse research.” *Pragmatics* 1. 71-106.

Du Bois, John W. 2006. *Representing Discourse*. Ms., University of California, Santa Barbara.

Du Bois, John W. 2009. “Discourse and Grammar.” In Tomasello, Michael (ed.), *The new psychology of language: Cognitive and functional approaches to language structure, Vol. 2*. Mahwah, N.J.: Lawrence Erlbaum.

Du Bois, John W., Susanna Cumming, Stephan Schuetze-Coburn, and Danae Paolino. 1992. “Discourse transcription.” *Santa Barbara Papers in Linguistics* 4. 1-225.

Du Bois, John W., Stephan Schuetze-Coburn, Susanna Cumming, and Danae Paolino. 1993. “Outline of discourse transcription.” In Edwards, Jane A. and Martin D. Lampert (eds.), *Talking data: Transcription and coding in discourse research.* Hillsdale, NJ: Erlbaum. 45-89.

Dussias, P. and N. Sagarra. 2007. The effect of exposure on syntactic parsing in Spanish-English. *Bilingualism: Language and Cognition* 10. 101-116.

Eckman, F.R. 1977. “Markedness and the constrastive analysis hypothesis.” *Language Learning* 27. 315-330.

Eckman, F.R., L. Bell, and D. Nelson. 1988. “On the generalization of relative clause instruction in the acquisition of English as a second language.” *Applied Linguistics* 9. 1-20.

Egi, Takako. 2007. “Recasts, learners’ interpretations, and L2 development.” In Mackey, A. (ed.), *Conversational interaction in second language acquisition: A collection of empirical studies*. Oxford University Press. 249-268.

Ellis, Nick C. 2002. “Frequency effects in language processing: A review with implications for theories of implicit and explicit language acquisition.” *Studies in Second Language Acquisition* 24. 143-188.

Ellis, Nick C. and Fernando Ferreira-Junior. 2009. “Constructions and their acquisition: Islands and the distinctiveness of their occupancy.” *Annual Review of Cognitive Linguistics* 7. 187-220.

Ellis, Rod. 1994. *The study of second language acquisition*. Oxford: Oxford University Press.

Ellis, Rod. 1999. “Theoretical perspectives on interaction and language learning.” In Ellis, Rod (ed.), *Learning a second language through interaction*. Amsterdam/Philadelphia: John Benjamins. 3-32.

Ellis, Rod. 2005. “Principles of instructed language learning.” *System* 33. 209-224.

Ellis, Rod. 2007. “The differential effects of corrective feedback on two grammatical structures.” In Mackey, A. (ed.), *Conversational interaction in second language acquisition: A collection of empirical studies*. Oxford University Press. 339-360.

Ellis, R., H. Basturkmen, and S. Loewen. 2001. “Learner uptake in communicative ESL lessons.” *Language Learning* 51(2). 281-318.

Ellis, R. S. Loewen, and R. Erlam. 2006. “Implicit and explicit corrective feedback and the acquisition of L2 grammar.” *Studies in Second Language Acquisition* 28. 339-368.

Ferguson, Charles A. 1971. “Absence of copula and the notion of simplicity: A study of normal speech, baby talk, foreigner talk, and pidgins.” In Hymes, Dell (ed.), *Pidginization and Creolization of Languages.* Cambridge: Cambridge University Press. 141–150.

Foster, P. and A. Ohta. 2005. “Negotiation for meaning and peer assistance in second language classrooms.” *Applied Linguistics* 26. 402-430.

Fox, Barbara A. and Sandra A. Thompson. 1990. “A discourse explanation of the grammar of relative clauses in English conversation.” *Language* 66(2). 297-316.

Fox, Barbara A., Makoto Hayashi, and Robert Jasperson. 1996. “Resources and repair: A cross-linguistic study of syntax and repair.” In Ochs, E., E.A. Schegloff, and S.A.Thompson (eds.), *Interaction and grammar*. Cambridge: Cambridge University Press. 185-237.

Gass, Susan M. 1979. “Language transfer and universal grammatical relations.” *Language Learning* 29. 327-344.

Gass, Susan M. 1982. “From theory to practice.” In Hines, M. & W. Rutherford (eds.), *On TESOL ’81: Selected papers of the Fifteenth Annual Conference of Teachers of English to Speakers of Other Languages*. Washington, D.C.: TESOL. 129-139.

Gass, Susan M. 2013. *Second language acquisition: An introductory course, 4th ed*. New York: Routledge.

Gass, S. and L. Selinker. 2001. *Second language acquisition: An introductory course, 2nd ed*. Mahwah, NJ: Erlbaum.

Gass, S. and J. Lee. 2011. “Working memory capacity, inhibitory control, and proficiency in a second language.” In Schmid, M. & W. Lowie (eds.), *Modeling bilingualism: From structure to chaos*. Amsterdam: John Benjamins. 59-84.

Giles, H. and P. Smith. 1979. “Accommodation theory: Optimal levels of convergence.” In Giles, H. & R. St. Clair (eds.), *Language and social psychology*. Oxford: Blackwell. 45-65.

Giles, Howard, Nikolas Coupland, and Justine Coupland. 1991. "Accommodation theory: Communication, context and consequence." In Giles, H., J. Coupland, & N. Coupland (eds.), *Context of accommodation: Developments in applied sociolinguistics*. Cambridge: Cambridge University Press. 1-68.

Givón, Talmy. 1979. *On understanding grammar.* New York: Academic Press.

Givón, Talmy. 1983. "Topic continuity and discourse: An introduction." In, Givón, Talmy (ed.), *Topic Continuity and Discourse.* Amsterdam: John Benjamins. 1-41.

Goldberg, Adele E. 1995. *Constructions: A Construction Grammar approach to argument structure.* Chicago University Press.

Goldberg, Adele. 2006. *Constructions at Work*. Oxford: Oxford University Press.

Gries, Stefan Th. 2005. Syntactic priming: A corpus-based approach. *Journal of Psycholinguistic Research*, 34(4): 365-399.

Gries, Stefan Th. 2008. "Corpus-based methods in analyses of second language acquisition data." In, Robinson, Peter and Nick C. Ellis (eds.) *Handbook of cognitive linguistics and second language acquisition*. London and New York: Routledge. 406-431.

Gries, Stefan Th. 2013. *Statistics for linguistics with R: A practical introduction, 2nd edition*. Berlin/Boston: De Gruyter Mouton.

Gries, Stefan Th. and Anatol Stefanowitsch. 2004. "Extending collostructional analysis: A corpus-based perspective on 'alternations'." *International Journal of Corpus Linguistics* 9(1). 97-129.

Gries, Stefan Th. and Stefanie Wulff. 2005. "Do foreign language learners also have constructions?" *Annual Review of Cognitive Linguistics* 3. 182-200.

Halliday, Michael Alexander Kirkwood, and Ruqaiya Hasan. 1976. *Cohesion in English*. London: Longman.

Han, Z-H. 2002. "A study of the impact of recasts on tense consistency in L2 output." *TESOL Quarterly* 36(4). 543-572.

Harrell, Frank E. 2001. *Regression modeling strategies: With applications to linear models, logistic regression, and survival analysis.* New York: Springer.

Hayashi, Makoto. 1994. "A comparative study of self-repair in English and Japanese conversation." In Akatsuka, Noriko (ed.), *Japanese/Korean Linguistics, Vol. IV*. Stanford: CSLI. 77-93.

Hayashi, Reiko. 1996. *Cognition, empathy, and interaction: Floor management of English and Japanese conversation*. Norwood, New Jersey: Ablex Publishing.

Heritage, John. 1984. "A change-of-state token and aspects of its sequential placement." In Atkinson, J.M. and J. Heritage (eds.), *Structures of social action: Studies in conversation analysis*. Cambridge University Press. 299-345.

Hinds, John. 1986. *Japanese*. Dover: Cloom Helm.

Hinds, John. 1982. *Ellipsis in Japanese*. Edmonton: Linguistic Research, Inc.

Hopper, Paul J. 1987. Emergent grammar. *Berkeley Linguistics Society* 13. 139-157.

Hopper, P. J., & Thompson, S. A. 1980. Transitivity in grammar and discourse. *Language* 56(2). 251-299.

Hosoda, Yuri. 2000. "Other repair in Japanese conversations between nonnative and native speakers." *Issues in Applied Linguistics* 11(1). 39-63.

Hosoda, Yuri. 2006. "Repair and relevance of differential language expertise in second language conversations." *Applied Linguistics* 27(1). 25-50.

Hypermedia Corpus of Spoken Japanese. URL: http://www.env.kitakyu-u.ac.jp/corpus/docs/index.html.

Inagaki, Shunji and Michael H. Long. 1999. "Implicit negative feedback." In Kanno, Kazue (ed.), *The acquisition of Japanese as a second language*. Philadelphia: John Benjamins. 9-30.

Inoue, K. 1976. *Henkei bunpoo to Nihongo* [Transformational grammar and Japanese]. Tokyo: Taishukan.

Iwasaki, Shoichi. 2002. *Japanese.* Philadelphia: John Benjamins.

Iwasaki, Shochi. 1987. "Identifiability, scope-setting, and the particle *wa*: A study of Japanese spoken expository discourse." Hinds, Maynard, & Iwasaki 1987. 107-141.

Iwashita, Noriko. 2003. "Negative feedback and positive evidence in task-based interaction." *Studies in Second Language Acquisition* 25. 1-36.

Jackendoff, R. 1987. *Consciousness and the computational mind*. New York: Academic Press.

Johnson, Yuki. 2008. *Fundamentals of Japanese grammar: Comprehensive acquisition*. Honolulu: University of Hawai'i Press.

Johnson, Keith. 2008b. *Quantitative methods in linguistics*. Wiley-Blackwell.

Jurafsky, Daniel. 1996. "A probabilistic model of lexical and syntactic access and disambiguation." *Cognitive Science* 20. 137-194.

Kanno, Kazue (ed.). 1999. *The acquisition of Japanese as a second language*. Philadelphia: John Benjamins.

Kasper, Gabriele and Richard Schmidt. 1996. "Developmental issues in interlanguage pragmatics." *Studies in Second Language Acquisition* 18. 149-169.

Keenan, Edward L. 1985. “Relative clauses.” In Shopen, Timothy (ed.), *Language typology and syntactic description II: Complex constructions*. Cambridge: Cambridge University Press. 141-170.

Keenan, Edward L. & Bernard Comrie. 1977. “Noun phrase accessibility and Universal Grammar.” *Linguistic Inquiry* 8. 63-99.

Kim, Y.-J. 1987. “The acquisition of relative clauses in English and Korean: Development in spontaneous production.” Unpublished doctoral dissertation, Harvard University.

Kita, Sotaro. 1999. “Japanese ideology of conversation and its structural manifestations: A study of aiduchi and head nods.” In Verschueren, J. (ed.), *Language and ideology: Selected papers from the 6th International Pragmatics Conference*, vol. 1. International Pragmatics Association, Antwerp. 262-269.

Kita, Sotaro & Sachiko Ide. 2007. “Nodding, *aizuchi*, and final particles in Japanese conversation: How conversation reflects the ideology of communication and social relationships.” *Journal of Pragmatics* 39. 1242-1254.

Krashen, S. 1981. *Second language acquisition and second language learning*. Oxford: Pergamon Institute of English.

Krashen, S. 1982. *Principles and practice in second language acquisition*. New York: Pergamon Institute of English.

Kumagai, T. 2004. “The role of repetition in complaint conversations.” In Szatrowski, P. (ed.), *Hidden and open conflict in Japanese conversational interaction*. Tokyo: Kuroshio. 199-220.

Kuno, S. & Y. Johnson. 2005. On the Non-Canonical Double Nominative Construction in Japanese: The Particle ga as an Object Marker. Studies in language, 29(2), 285-328.

Kuno, Susumu. 1973. *The structure of the Japanese language*. Cambridge, MA: MIT Press.

Langacker, R. W. 1987. *Foundations of Cognitive Grammar*, vol. 1: Theoretical prerequisites. Stanford University Press.

Learner’s Language Corpus of Japanese. http://cblle.tufs.ac.jp/llc/ja/.

Lebra, T.S. 1976. *Japanese Patterns of Behavior*. Honolulu: The University of Hawaii Press.

Lee, Lina. 2002. “Synchronous online exchanges: A study of modification devices on non-native discourse.” *System* 30. 275-288.

Leeman, J. 2003. “Recasts and second language development: Beyond negative evidence.” *Studies in Second Language Acquisition* 25(1). 37-63.

Li, C. N., and S. A. Thompson. 1976. “Subject and Topic: A New Typology of Language.” In Li, C. N. (ed.), *Subject and Topic*. New York: Academic Press. 457-490.

Linell, Per. 2005. *The written language bias in linguistics: Its nature, origins, and transformation*. Oxford: Routledge.

Loewen, S. and T. Nabei. 2007. “Measuring the effects of oral corrective feedback on L2 knowledge.” In Mackey, A. (ed.), *Conversational interaction in second language acquisition: A collection of empirical studies*. Oxford University Press. 361-378.

Long, M.H. 1981. “Input, interaction, and second language.” In Winitz, H. (ed.), *Native Language and Foreign Language Acquisition*. New York: Annals of the New York Academny of Sciences.

Long, M.H. 1983. “Native speaker/non-native speaker conversation and the negotiation of comprehensible input.” *Applied Linguistics* 4(2). 126-141.

Long, M.H. 1985. “Input and second-language acquisition theory.” In Gass, S.M. (ed.), *Input in Second Language Acquisition*. Rowley, Mass.: Newbury House.

Long, M.H. 1990. “The least a second language acquisition theory needs to explain.” *TESOL Quarterly* 24(4). 649-666.

Long, M.H. 1996. “The role of the linguistic environment in second language acquisition.” In Ritchie, W.C. and T.K. Bhatia (eds.), *Handbook of Second Language Acquisition*. New York: Academic Press.

Long, M.H., S. Inagaki, and L. Ortega. 1998. “The role of implicit negative feedback in SLA: Models and recasts in Japanese and Spanish.” *The Modern Language Journal*. 82. 357-371.

Lyster, R. 1998. “Recasts, repetition, and ambiguity in L2 classroom discourse.” *Studies in Second Language Acquisition.* 20. 51-81.

Lyster, R. 2004. “Differential effects of prompts and recasts in form-focused instruction.” *Studies in Second Language Acquisition* 26. 399-432.

Lyster, R. and L. Ranta. 1997. “Corrective feedback and learner uptake: negotiation of form in communicative classrooms.” *Studies in Second Language Acquistion* 19. 37-66.

Mackey, A., S.M. Gass, and K. McDonough. 2000. “How do learners perceive interactional feedback?” *Studies in Second Language Acquisition* 28. 169-178.

Mackey, A. & S.M. Gass. 2006. “Pushing the methodological boundaries in interaction research: Introduction.” *Studies in Second Language Acquisition* 28. 169-178.

Mackey, A. 2007. “Interaction as practice.” In DeKeyser, R. (ed.), *Practice in a second language: Perspectives from applied linguistics and cognitive psychology*. Cambridge University Press.

Mackey, A. & J. Philp. 1998. “Conversational interaction and second language development: Recasts, responses, and red herrings?” *Modern Language Journal*. 82. 338-356.

Mackey, A., J. Philp, T. Egi, A. Fujii, & T. Tatsumi. 2002. “Individual differences in working memory, noticing of interactional feedback, and L2 development.” In Robinson, P. (ed.), *Individual differences and instructed language learning*. Philadelphia: John Benjamins. 181-209.

MacWhinney, B. 2004. “A multiple process solution to the logical problem of language acquisition.” *Journal of Child Language* 31(4). 883-914.

Makino, S., & Tsutsui, M. 1995. *A dictionary of intermediate Japanese grammar*. Japan Times.

Martin, S.E. 2004. *A reference grammar of Japanese*. Honolulu: University of Hawai’i Press.

Maruyama, Akiyo. 2003. “Japanese *wa* in conversational discourse: A contrast marker.” *Studies in Language* 27(2). 245-285.

Masuoka, T. and Y. Takubo. 1992. *Kiso Nihongo bunpoo kaiteiban* [Basic Japanese grammar: A revised version]. Tokyo: Kuroshio Shuppan.

Matsumoto, Yoshiko. 1988. “Semantics and pragmatics of noun-modifying constructions in Japanese.” *Berkeley Linguistics Society* 14. 166-175.

Matsumoto, Yoshiko. 1989. “Grammar and semantics of adnominal clauses in Japanese.” PhD dissertation. University of California, Berkeley.

Matsumoto, Yoshiko. 1997. *Noun-modifying constructions in Japanese: A frame-semantic approach*. Amsterdam: Benjamins.

Matsumoto, Yoshiko. 1999. “Interaction of factors in construal: Japanese relative clauses.” In Shibatani, Masayoshi and Sandra A. Thompson (eds.), Grammatical constructions: Their form and meanings. Oxford: Oxford University Press. 103-124.

Matsumoto, Yoshiko. 2007. “Interaction of multiple factors in relative clause construal and acquisition.” *Studies in Second Language Acquisition* 29. 367-374.

Matsumoto, Yoshiko. 2013. (Oral presentation.) Convenor for Theme session 1: “Generalized Noun Modifying Clause Constructions,” Association for Linguistic Typology 10th Biennial Conference (ALT 10). Aug. 17, 2013. Leipzig.

Maynard, S.K. 1986. “On back-channel behavior in Japanese and English casual conversation.” *Linguistics* 24. 1079-1108.

Maynard, S.K. 1992. “Where textual voices proliferate: The *to yuu* clause-noun combination in Japanese.” *Poetics* 21. 169-189.

Maynard, S.K. 1993. *Discourse modality, subjectivity, emotion and voice in the Japanese language*. Amsterdam: John Benjamins.

Miyake, A. and N. Friedman. 1998. “Individual differences in second language proficiency: Working memory as language aptitude.” In Healy, A.F. & L.E. Bourne, Jr. (eds.), *Foreign language learning: Psycholinguistic studies on training and retention*. Mahwah, NJ: Lawrence Erlbaum Associates. 339-364.

Mizutani, Nobuko. 1982. “The listener’s responses in Japanese conversation.” *Sociolinguistic Newsletter* 13(1). 33-38.

Mizutani, Nobuko. 1984. “Nihongokyouiku to hanashikotoba no jittai.” In *Kindaichi Haruhiko Koki-kinen Ronbunshuu*, vol. 2. Sanseido, Tokyo. 261-279.

Mori, Junko. 1999. *Negotiating agreement and disagreement in Japanese: Connective expressions and turn construction*. Philadelphia: John Benjamins.

Mori, Junko. 2004. “Negotiating sequential boundaries and learning opportunities: A case from a Japanese language classroom.” *The Modern Language Journal* 88(4). 536-550.

Muraki, M. 1970. “Presupposition, pseudo-clefting, and thematization.” PhD dissertation, University of Texas at Austin.

Nabei, Toshiyo. 2002. “Recasts in classroom interaction: A teacher’s intention, learner’s attention, and second language learning.” Ph.D. dissertation, University of Toronto.

Nakada, T. 1991. “Kaiwa ni arawareru kurikaeshi no hatsuwa.” [Repeating utterances in conversation.] *Nihongogaku* 10(10). 52-62.

Nakamura, Hiroaki. 2006. “Topic-Comment Articulation in Japanese: A Categorial Approach.” Proceedings of the 20th Pacific Asia Conference on Language, Information and Computation, Wuhan, China 1-3 November, 2006.

Nelson, K.E. 1991. On differentiated language learning models and differentiated interventions. In Krasnegor, N., D. Rumbaugh, & R. Schiefelbusch (eds.), *Language acquisition: Biological and behavioral determinants*. Hillsdale, NJ: Erlbaum. 399-428.

Noonan, Michael. 1985. “Complementation.” In Shopen, Timothy (ed.), *Language typology and syntactic description II: Complex constructions*. Cambridge: Cambridge University Press. 42-140.

Ochs, Elinor. 1979. Introduction: What child language can contribute to pragmatics. In Ochs, Elinor and Bambi B. Schieffelin (eds.), *Developmental pragmatics*. New York: Academic Press. 1-17.

Ohta, A.S. 2000. “Rethinking recasts: A learner-centered examination of corrective feedback in the Japanese classroom.” In Hall, J.K. and L. Verplaetse (eds.), *Second and foreign language learning through classroom interaction.* Mahwah, N.J.: Lawrence Erlbaum Associates.

Okutsu, K. 1974. *Seisei Nihongo bunpoo ron: Meishi-ku no koozoo* [On generative grammar: The structure of noun phrases]. Tokyo: Taishukan.

Ono, Tsuyoshi, Sandra A. Thompson, and Ryoko Suzuki. 2000. “The pragmatic nature of the so-called subject marker *ga* in Japanese: Evidence from conversation.” *Discourse Studies* 2(1). 55-84.

Ono, Tsuyoshi, and Sandra A. Thompson. 2009. “Fixedness in Japanese adjectives in conversation: Toward a new understanding of a lexical (part-of-speech) category.” In Corrigan, Roberta, Edith Moravcsik, Hamid Ouali, and Kathleen Wheatley (eds.), *Formulaic Language*. Amsterdam: Benjamins. 117-145.

Ono, Tsuyoshi, and Sandra A. Thompson. 1997. "Deconstructing 'Zero Anaphora' in Japanese." *Proceedings of the Annual Meeting of the Berkeley Linguistics Society* 23(1).

Ozeki, Hiromi. 2005. "Dainigengo ni okeru Nihongo no meishi shuushokusetsu no sanshutsu wa fuhenteki shuutoku nan'ido kaisoo ni shitagau ka" [Does the acquisition of noun-modifiying constructions in L2 Japanese follow the noun phrase accessibility hierarchy?]. *Dainigengo toshite no Nihongo no Shuutoku Kenkyuu* [Acquisition of Japanese as a Second Language] 8. 64-82.

Ozeki, Hiromi and Yasuhiro Shirai. 2010. "Semantic bias in the acquisition of relative clauses in Japanese." *Journal of Child Language* 37. 197-215.

Pica, T. 1992. "Communication with second language learners: What does it reveal about the social and linguistic processes of second language learning?" In Alatis, J. (ed.), *Georgetown University Round Table on Languages and Linguistics*. Washington D.C.: Georgetown University Press.

Pica, T. 1994. "The language learner's environment as a resource for linguistic input? A review of theory and research." *ITL Review of Applied Linguistics* 26. 69-116.

Rampton, B. 1990. "Displacing the 'native speaker': Expertise, affiliation, and inheritance." *ELT Journal* 44. 97-101.

Roberts, M. 2000. "Implicational markedness and the acquisition of relativization by adult learners of Japanese as a foreign language." Unpublished doctoral dissertation, University of Hawai'i at Manoa, Honolulu.

Rosa, E.M. and R.P. Leow. 2004. "Awareness, different learning conditions, and second language development." *Applied Psycholinguistics* 25(2). 269-292.

Russell, Jane and Nina Spada. 2006. "The effectiveness of corrective feedback for the acquisition of L2 grammar: A meta-analysis of the research." In Norris, John M. and Lourdes Ortega (eds.), *Synthesizing research on language learning and teaching*. Amsterdam: Benjamins. 133-164.

Sacks, H. and E.A. Schegloff. 1979. "Two preferences in the organization of reference to persons in conversation and their interaction." In Psathas, G. (ed.), *Everyday language: Studies in ethnomethodology*. New York: Irvington Publishers. 15-21.

Sakamoto, T. and S. Kubota. 2000. "Nihongo no kankeisetsu so syuutoku ni tuite" [On the acquisition of Japanese relative clauses]. *Nanzan-Daigaku Kyoiku Sentaa Kiyoo* [The Bulletin of the Center for International Education, Nanzan University] 1. 114-126.

Sakuma, Kanae. 1941. *Nihongo no tokushitsu*. [The characteristics of Japanese]. Tokyo: Ikuei Shoin, 1941. Reprinted by Tokyo: Kuroshio Shuppan, 1995.

Sasaki, Yoshinori. 1991. "English and Japanese interlanguage comprehension strategies: An analysis based on the competition model." *Applied Psycholinguistics* 12. 47-73.

Sasaki, Yoshinori. 1998. “Processing and learning of Japanese double-object active and causative sentences: An error-feedback paradigm.” *Journal of Psycholinguistic Research* 27(4). 453–479.

Savage, Ceri, Elena Lieven, Anna Theakston, and Michael Tomasello. 2006. “Structural priming as implicit learning in language acquisition: The persistence of lexical and structural priming in 4-year-olds.” *Language Learning and Development* 2(1). 27-49.

Schachter, Jacquelyn. 1991. “Corrective feedback in historical perspective.” *Second Language Research*. 7. 89-102.

Schachter, Jacquelyn. 1992. “A new account of language transfer.” In Gass, Susan & Larry Selinker, (eds.), *Language transfer in language learning*. Philadelphia: John Benjamins. 32-46.

Schegloff, E.A., G. Jefferson, and H. Sacks. 1977. “The preference for self-correction in the organization of repair in conversation.” *Language* 53(2). 361-382.

Schegloff, E.A. 1979. “The relevance of repair for syntax-for-conversation.” In Givón, T. (ed.), *Syntax and Semantics 12: Discourse and Syntax*. New York: Academic Press. 261-88.

Schegloff, E.A. 1982. “Discourse as an interactional achievement: some use of ‘UH-HUH’ and other things that come between sentences.” In Tannen, Deborah (ed.), *Georgetown University Round Table on Languages and Linguistics, Analyzing Discourse: Text and Talk*. Washington, D.C.: Georgetown University Press. 71-93.

Schegloff, E.A. 1987. “Analyzing single episodes of interaction: An exercise in Conversation Analysis.” *Social Psychology Quarterly* 50(2). 101-114.

Schegloff, E.A. 1991. “Reflection on talk and social structure.” In Borden, D. and D.H. Zimmerman (eds.), *Talk and Social Structure*. Cambridge: Polity Press. 44-70.

Schegloff, E.A. 1992. “Repair after next turn: The last structurally provided defense of intersubjectivity in conversation.” *American Journal of Sociology* 97(5). 1295-1345.

Schegloff, E.A. 1996. “Turn organization: One intersection of grammar and interaction.” In Ochs, E. and S. Thompson (eds.), *Interaction and Grammar.* Cambridge University Press.

Schegloff, E.A. 2007. *Sequence organization in interaction: A primer in Conversation Analysis*. New York: Cambridge University Press.

Schmidt, R. 1990. “The role of consciousness in second language learning.” *Applied Linguistics* 11. 129-158.

Schmidt, R. 1994. “Deconstructing consciousness in search of useful definitions for applied linguistics.” *AILA Review* 11. 11-26.

Schmidt, R. 1995. “Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning.” In Schmidt, R. (ed.), *Attention and awareness in foreign language learning*. Honolulu: University of Hawai’i Press.

Schmidt, R. and S. Frota. 1986. “Developing basic conversational ability in a second language: a case study of an adult learner of Portuguese.” In Day, R. (ed.), *Talking to learn: Conversation in second language acquisition*. Rowley, Mass.: Newbury House.

Schuetze-Coburn, Stephan, Marian Shapley, and Elizabeth G. Weber. 1991. “Units of intonation in discourse: A comparison of acoustic and auditory analysis.” *Language and speech* 34(3). 207-234.

Scollon, R. 1976. *Conversations with a one-year old: A case study of the developmental foundations of syntax.* Honolulu: University Press of Hawaii.

Seger, Carol A. 1994. “Implicit learning.” *Psychological Bulletin* 115(2). 163-196.

Service, E., M. Simola, O. Metsaenheimo, & S. Maury. 2002. “Bilingual working memory span is affected by language skill.” *European Journal of Cognitive Psychology* 13. 383-407.

Sheskin, David J. 2011. *Handbook of parametric and nonparametric statistical procedures*. Boca Raton, FL: Chapman and Hall/CRC.

Shibatani, Masayoshi. 1999. “Non-canonical constructions in Japanese.” *Kobe Papers in Linguistics*. No. 2. Kobe University. 181-218.

Shibatani, Masayoshi. 1985. “Passives and related constructions: A prototype analysis.” *Language* 61. 821-848.

Song, Jae Jung. 1991. “Korean relative clause constructions: Conspiracy and pragmatics.” *Australian Journal of Linguistics* 11. 195-220.

Sugamoto, Nobuko. 1982. “Transitivity and objecthood in Japanese.” In Hopper, Paul and Sandra A. Thompson (eds.), *Studies in Transitivity*. New York: Academic Press. 423-427.

Suzuki, Ryoko. 2007. “Quoting and topic-marking: Some observations on the quotative *tte* contruction in Japanese.” In Laury, Ritva (ed.), *Crosslinguistic studies of clause-combining: The multifunctionality of conjunctions.* Philadelphia: John Benjamins. 231-246.

Szatrowski, Polly E. 1993. *Nihongo no danwa no koozoo bunseki. Kan’yuu no sutoratejii no koosatsu*. [Japanese discourse and an analysis of its structure: An insight into invitation strategies.] Tokyo: Kuroshio.

Szatrowski, Polly E. 2010. “Creating involvement in a large Japanese lecture: Telling the story of a haiku.” In Szatrowski, Polly E. (ed.), *Storytelling across Japanese conversational genre.* Philadelphia: John Benjamins. 267-302.

Takagi, Tomoyo. 2002. “Contextual Resources for Inferring Unexpressed Referents in Japanese Conversations.” *Pragmatics* 12(2). 153-182.

Takara, Nobutaka. 2012. “The weight of head nouns in noun-modifying constructions in conversational Japanese.” *Studies in Language* 36(1). 33-72.

Tarallo, F. and J. Myhill. 1983. “Interference and natural language in second language acquisition.” *Language Learning* 33. 55-76.

Tarone, Elaine. 1980. “Communication strategies, foreigner talk, and repair in interlanguage.” *Language Learning* 30(2). 417-431.

Tarone, Elaine. 1983. “Some thoughts on the notion of communication strategy.” In Faerch, Klaus and Gabriele Kasper (eds.), *Strategies in interlanguage communication.* London: Longman. 61-74.

Theakston, Anna L. and Elena V. M. Lieven. 2008. The influence of discourse context on children’s provision of auxiliary BE. *Journal of Child Language*. 35: 129-158.

Thompson, Sandra A. and Paul J. Hopper. 2001. Transitivity, clause structure, and argument structure: Evidence from conversation. In Bybee, Joan and Paul J. Hopper (eds.), *Frequency and the emergence of linguistic structure*. Amsterdam: John Benjamins. 27-60.

Terakura, H. 1983. “Noun modification and the use of *to yuu*.” *The Journal of the Association of Teachers of Japanese* 18(1). 23-55.

Tomasello, Michael. 2006. “Construction *grammar* for kids.” *Constructions*, special vol. 1, [np]. www.constructions-online.de.

Tomasello, Michael. 2002. “The emergence of grammar in early child language.” In Givón, T. and Bertram F. Malle (eds.), *The evolution of language out of pre-language.* Amsterdam: John Benjamins. pp. 309-328.

Tomasello, Michael. 2000. “Do young children have adult syntactic competence?” *Cognition* 74. 209-253.

Tsutsui, Michio. 1983. “Ellipsis of *ga*.” *Papers in Japanese Linguistics* 9. 199-244.

White, L. 1987. “Against comprehensible input: The input hypothesis and the development of L2 competence.” *Applied Linguistics* 8. 95-110.

White, L. 1991. “Adverb placement in second language acquisition: Some effects of positive and negative evidence in the classroom.” *Second Language Research* 7(2). 133-161.

White, Sheida. 1989. “Backchannels across cultures: A study of Americans and Japanese.” *Language in Society* 18(1). 59-76.

Williams, John N. and Chieko Kuribara. 2008. “Comparing a nativist and emergentist approach to the initial stage of SLA: An investigation of Japanese scrambling.” *Lingua* 118. 522-553.

Yamaguchi, Toshiko. 2007. *Japanese language in use: An introduction*. New York: Continuum.

Zar, Jerrold H. 1999. *Biostatistical Analysis, 4th ed*. Upper Saddle River, NJ: Prentice Hall.

Zuur, A., E.N. Ieno, N. Walker, A.A. Saveliev, and G.M. Smith. 2009. “Mixed-effects modelling for nested data.” In their *Mixed effects models and extensions in ecology with R.* New York: Springer. 101-142.

Appendix 1

SpeakerType	Givenness	SubjReal: *No*	*Yes*
Native Speaker (*NJS*)	0	123	418
	1	2	3
	2	6	4
	3	4	12
	4	8	5
	5	14	11
	6	20	14
	7	38	12
	8	75	27
	9	207	47
	10	1930	283
Non-native speaker (*NNS*)	0	106	408
	1	2	5
	2	0	3
	3	3	10
	4	7	4
	5	4	8
	6	15	9
	7	20	10
	8	74	23
	9	171	59
	10	1489	259

Accompanying Data for Figure 5.1: Exploration of the Data: Givenness

Appendix 2

	From REML			From ML
Predictor	**Estimate**	**Std Error**	**t**	**p**
Intercept	1.760894	0.020719	84.99	<2e-16 ***
GIVENNESS	-0.065570	0.002319	-28.27	<2e-16 ***
CONTRAST	0.048873	0.040421	1.21	0.0865
SPEAKERTYPE	0.028063	0.013067	2.15	0.0291 *
Interaction (GIVENNESS: CONTRAST)	0.067703	0.004922	13.76	<2e-16 *

Corresponding REML results to ML results given in Table 5.2

Note that the estimates, standard errors, and t-values have been calculated from the REML (restricted maximum likelihood estimation), while p-values have been obtained from the ML (maximum likelihood estimation) (since the R function lmer does not provide p-values for REML estimates).

Appendix 3

The following table lists the adjustments to slopes and intercepts of individual speakers.

	SPEAKERID	**Intercept**	**SPEAKERID**	**Intercept: GIVENNESS**	**SPEAKERID**	**Intercept: CONTRAST**
1	11-JE_NJS	-0.725	**25-JE_NNS**	-0.117	10-JE_NNS	-1.367
2	1-JC_NNS	-0.594	**24-JE_NNS**	-0.094	2-JK_NNS	-0.990
3	2-JK_NJS	-0.354	24-JE_NJS	-0.069	2-JK_NJS	-0.738
4	10-JE_NNS	-0.261	**26-JE_NNS**	-0.042	11-JE_NJS	-0.688
5	7-JE_NJS	-0.242	16-JE_NJS	-0.032	10-JE_NJS	-0.640
6	1-JC_NJS	-0.222	25-JE_NJS	-0.030	18-JK_NJS	-0.503
7	11-JE_NNS	-0.203	7-JE_NNS	-0.023	7-JE_NJS	-0.486
8	2-JK_NNS	-0.128	19-JC_NJS	-0.022	8-JE_NNS	-0.466
9	8-JE_NNS	-0.117	26-JE_NJS	-0.012	16-JE_NNS	-0.449
10	16-JE_NNS	-0.114	11-JE_NNS	-0.011	8-JE_NJS	-0.414
11	10-JE_NJS	-0.045	18-JK_NNS	-0.004	1-JC_NNS	-0.215
12	19-JC_NNS	-0.027	19-JC_NNS	-0.004	18-JK_NNS	-0.102
13	18-JK_NJS	0.037	8-JE_NJS	0.005	19-JC_NJS	0.066
14	16-JE_NJS	0.053	1-JC_NJS	0.007	25-JE_NJS	0.128
15	26-JE_NJS	0.070	18-JK_NJS	0.017	26-JE_NJS	0.142
16	18-JK_NNS	0.087	16-JE_NNS	0.029	19-JC_NNS	0.148
17	8-JE_NJS	0.128	8-JE_NNS	0.030	7-JE_NNS	0.270
18	7-JE_NNS	0.132	10-JE_NJS	0.031	1-JC_NJS	0.336
19	**26-JE_NNS**	0.199	7-JE_NJS	0.042	24-JE_NJS	0.486
20	19-JC_NJS	0.215	2-JK_NNS	0.053	**26-JE_NNS**	0.573
21	25-JE_NJS	0.271	2-JK_NJS	0.063	16-JE_NJS	0.662
22	**25-JE_NNS**	0.482	1-JC_NNS	0.064	11-JE_NNS	0.717
23	**24-JE_NNS**	0.515	10-JE_NNS	0.081	**24-JE_NNS**	1.114
24	24-JE_NJS	0.527	11-JE_NJS	0.095	**25-JE_NNS**	1.761

Adjustments for each SPEAKERID

The positive or negative values shown for each speaker in this table are not errors; rather, they are adjustments that the model made for each speaker (SPEAKERID) so that the fitted curve better captures that speaker's variation. When comparing speakers' adjustments, the absolute size of the adjustments is not important compared with other factors such as whether the adjustments of particular speakers are in the same (either positive or negative) direction and/or whether they group together.